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Stockpile and Post-Remedial  
Excavation Confirmation Report  
Parcel A, Report No. 7

Boeing Realty Corporation C-6 Facility  
Los Angeles, California

March 1998



**MONTGOMERY WATSON**

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EXCAVATION CONFIRMATION REPORT  
PARCEL A  
REPORT NO. 7**

**BOEING REALTY CORPORATION C-6 FACILITY  
LOS ANGELES, CALIFORNIA**

**March 1998**

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## SECTION 1.0

### INTRODUCTION

In October 1996, Montgomery Watson (Montgomery) was retained by McDonnell Douglas Realty Company, now the Boeing Realty Corporation (BRC), to assist with the redevelopment of Parcel A (the Site) of their C-6 Facility located in Los Angeles, California. Figure 1 presents the C-6 Facility. Figure 2 delineates the Site. The Site was formerly used to manufacture and store aircraft parts.

#### 1.1 OVERVIEW

The Site consists of the northernmost quarter of the C-6 Facility, encompassing approximately 50 acres. Demolition of the following buildings has occurred: Building 29, 33, 34, 36, 37, 40, 41, 43/44, 45, 57, 58, 61, 66-A, and 67.

Information gathered during the data compilation and evaluation phase of this project indicated the presence of petroleum products and other chemicals of concern in the surface and subsurface.

A soil sampling and remedial excavation effort was conducted in conjunction with the removal of foundations, slabs, and below-ground structures. The purpose of this effort was to assess soil quality and remove soil affected with petroleum hydrocarbons and other chemicals of concern in preparation for redevelopment of the Site. Soil which was determined to be affected with petroleum hydrocarbons and other chemicals was excavated and stockpiled at the Site. Confirmation samples were collected along the walls and floor of each remedial excavation to confirm that the surface soil (upper 12 feet) met soil screening criteria at sample locations.

Stockpiled soil and confirmation samples discussed in this report were generated from four remedial excavations conducted at four different locations at the Site.

#### 1.2 PURPOSE AND OBJECTIVES

The lead agency for this project is the Los Angeles Regional Water Quality Control Board (RWQCB). The process of screening excavated soil and confirming *in situ* soil quality as presented in this document has been approved by the RWQCB. Following the initial review and implementation of this process, the RWQCB has allowed BRC to undertake excavation and backfilling operations without intermittent agency review. All BRC decisions based upon the approved soil screening process are documented for final agency review and approval. This approach was developed to expedite the soil quality evaluation process, and this report has been prepared to document the process used by BRC to evaluate excavated and residual soil at Site locations discussed herein.

Specifically, the purpose and objectives of this report are:

- 1) To document the quality of the stockpiled soil generated from remedial excavations according to the Facility-wide soil screening criteria, and the process by which the stockpiled soils were divided into two categories: (a) soils requiring treatment or off-site disposal, and (b) soils suitable for use as construction backfill at the Site.
- 2) To document that surface soil (upper 12 feet) in each remedial excavation meets the established soil screening criteria.



## SECTION 2.0

### REMEDIAL EXCAVATIONS

Four remedial excavations were conducted at four different locations. A description of the each remedial location excavation is presented below in the order in which excavation activities occurred.

#### **Water Line**

A remedial excavation was conducted when affected soil was discovered during the removal of a portion of the transite water line near the former location of Building 57. The water line was used as part of the Facility's fire suppression system. This remedial excavation was recorded using the following nomenclature:

Water Line (WL) - Remedial Excavation (RE) - Chronological Number (#)  
e.g., WL-RE-1

#### **Building 44**

The water tanks located at the former Building 43/44 in the northeast corner of Site (see Figure 2) were used to store diesel fuel oil which was pumped into Building 41 through buried product pipelines. These tanks were converted from diesel storage to water tanks (part of the C-6 Facility's fire suppression system) approximately 25 years ago. Building 43/44 (as presented on Figure 2) refers to both the water tanks and the adjoining pump house. Historical documentation is unclear as to which building number corresponds to the water tanks or the pump house.

A remedial excavation was conducted when affected soil was discovered during the removal of the water tanks. For convenience, this remedial excavation will be referred to as Building 44. This remedial excavation was recorded using the following nomenclature:

Building Number (B#) - Remedial Excavation (RE) - Chronological Number (#)  
e.g., B44-RE-1

#### **Building 37**

Building 37 housed foundry operations in the south central portion of the building, and large machine presses and lathes throughout the building. Foundry and press machines were contained in 15 large pits (approximately 8 feet deep, 20 feet wide, and 60 feet long). A ground floor room on the east side of the building housed the tooling department where employees would produce parts for the machines throughout the facility. A parts cleaning

tank sat in a sump within this room. Two clarifiers were located outside the east wall of the building. A hydraulically-powered elevator was located inside the northeast portion of the building.

#### Building 37 PCB Dig Out

Elevated concentrations of polychlorinated biphenyls (PCBs) were detected in soil by Kennedy Jenks (1996) during the Phase II subsurface investigation at the Site. A remedial excavation was conducted to remove the soil affected with PCBs. This remedial excavation was recorded using the following nomenclature:

Building Number (B#) - Remedial Excavation (RE) - Chronological Number (#)  
e.g., B37-RE-6

#### Building 37 Footing

A remedial excavation was conducted near the southeast corner of former Building 37 when affected soil was discovered during the removal of a buried concrete footing. This remedial excavation was recorded using the following nomenclature:

Building Number (B#) - Remedial Excavation (RE) - Chronological Number (#)  
e.g., B37-RE-7

The location of each remedial excavation discussed in this report is presented in Figure 3. The 20-foot by 20-foot grid used to reference Building 37 remedial excavations was extended to the locations of the remedial excavations presented above for the same purpose.

Pertinent information related to the remedial excavations and the associated stockpiled soil discussed in this report is presented below. The locations of each stockpile are presented in Figure 4 through Figure 8.

Excavation/Stockpile(s)	Approximate Volume	Date of Excavation	Stockpile Location(s)
WL-RE-1 / A, B	286 cu yds total	12 Aug 97 — 6 Nov 97	West of Building 34 and west of Site access road.
B44-RE-1 / A, B, C	643 cu yds total	3 Sep 97 — 14 Oct 97	West of Site access road.
B37-RE-6 / A	89 cu yds	14 Oct 97	West of Site access road
B37-RE-7 / A	179 cu yds	28 Oct 97 — 29 Oct 97	West of Site access road

## **2.1 SOIL SAMPLING**

Hot spot sampling and confirmation sampling have been employed at the remedial excavations discussed in this report. Detailed procedures for these activities are outlined in the *Sampling and Analysis Plan for Demolition Activities at the Douglas Aircraft Company C-6 Facility* prepared by Integrated Environmental Services, Inc. (IESI, 1997(a)) which has

been reviewed and approved by the RWQCB. In addition, stockpile sampling was performed on the excavated material. These procedures can be summarized as follows:

### **2.1.1 Hot Spot Sampling**

Hot spot sampling was conducted at predetermined locations where former items of concern were located, and at other locations where demolition activities revealed soil which may have been affected by petroleum hydrocarbons or other chemicals of concern.

Hot spot samples were collected by first exposing "fresh" soil beneath the surface using a stainless steel utensil or similar device. A photoionization detector (PID) was used to measure headspace organic vapor concentrations in the freshly exposed soil at each location. Soil samples were collected for analysis where at least one of the following conditions existed: 1) the headspace volatile organic compound (VOC) reading exceeded 5 ppm, (2) areas where staining of the soil was visible, or (3) areas where odors were noticeable.

Soil samples were collected for analysis in pre-cleaned, stainless steel sleeves by driving the sleeve into the soil with a rubber mallet or drive sampler. The ends of the sleeves were then covered with Teflon film and secured with plastic end caps. A unique sample identification using the following nomenclature was written in indelible ink on a sample label and attached to the sleeve:

Building No. (B#) - Grab Sample (GS) - Chronological Number (#) - Sample Depth (feet)  
e.g., B44-GS-5-2'

Sample sleeves were placed in a cooler with blue ice and transported under chain-of-custody to a State-certified laboratory for analysis. Hot spot samples have been analyzed according to the analytical schedule presented in Table 1.

Hot spot sample locations discussed in this report have been subsequently excavated and data collected from these samples are considered representative of the corresponding stockpile soil quality.

### **2.1.2 Stockpile Sampling**

Excavated soil was placed in stockpiles each consisting of approximately 250 cubic yards of soil. Generally, stockpile samples were collected at a frequency of approximately one sample per stockpile. Stockpile samples were collected from the most noticeably affected soil within the stockpile. Samples were collected by using a shovel to cut vertically into the side of a stockpile at each sample location to expose "fresh" soil; samples were then collected from the exposed vertical wall and headspace VOC concentrations were measured using the PID.

Soil samples were collected for analysis in pre-cleaned, stainless steel sleeves by driving the sleeve into the soil with a rubber mallet or drive sampler. The ends of the sleeves were then covered with Teflon film and secured with plastic end caps. A unique sample identification

using the following nomenclature was written in indelible ink on a sample label and attached to the sleeve:

Building No. (B#) - Remedial Excavation No.(RE#) - Stockpile Chronological Number (SP#)

e.g., B37-RE6-SP1

Sample sleeves were placed in a cooler with blue ice and transported under chain-of-custody to a State-certified laboratory for analysis.

Stockpile samples have been analyzed according to the analytical schedule presented in Table 1.

### **2.1.3 Confirmation Sampling**

Confirmation sampling was conducted to ensure that residual surface soil (upper 12 feet) met soil screening criteria at each excavation. Confirmation sampling was conducted along the walls and floor of each excavation.

Generally, soil removal continued at a particular location until the following conditions were met: 1) the headspace VOC reading in freshly exposed soil was less than or equal to 5 ppm, and soil staining was not visible, and odors were not noticeable, or 2) the maximum excavation depth of 12 feet had been reached. A confirmation sample was collected when these conditions were met. Iterations of additional soil excavation were conducted as required until confirmation sample analytical data indicated that *in situ* soil quality met the soil screening criteria established in Section 3.1 of this report, or the maximum excavation depth of 12 feet had been reached.

Confirmation soil samples were collected by first exposing "fresh" soil beneath the surface of a wall and floor of an excavation using a stainless steel utensil or similar device. Soil samples were collected for analysis in pre-cleaned, stainless steel sleeves by driving the sleeve into the soil with a rubber mallet or drive sampler. The ends of the sleeves were then covered with Teflon film and secured with plastic end caps. A unique sample identification using the following nomenclature was written in indelible ink on a sample label and attached to the sleeve:

Building No. (B#) - Grab Sample (GS) - Chronological Number (#) - Sample Depth (feet)  
e.g., B37-GS-210-7'

Sample sleeves were placed in a cooler with blue ice and transported under chain-of-custody to a State-certified laboratory for analysis. Confirmation samples have been analyzed according to the analytical schedule presented in Table 1; however, some confirmation sample analyses were limited to target-specific chemicals once such analytes were identified either through previous sampling activities or historical site knowledge.

Sample sleeves were placed in a cooler with blue ice and transported under chain-of-custody to a State-certified laboratory and analyzed according to the analytical schedule presented in Table 1.

## **2.2 SOIL EXCAVATION**

Remedial excavation to remove affected soil was conducted when one of the following conditions was discovered: (1) elevated PID readings greater than 5 ppm in hot spot samples, (2) visible staining, and (3) noticeable odors.

Remedial excavations were performed using heavy equipment (excavators, front-end loaders, end-dump trucks) associated with the building demolition effort. Air monitoring in accordance with South Coast Air Quality Management District Rule 1166 was conducted throughout remedial excavation activities.

The maximum depth of any excavation was approximately 12 feet below grade. Excavated soil was segregated based on the location from where it was removed. Soil stockpiles were placed on asphalt or plastic sheeting, and covered with plastic sheeting to protect the soil from the elements. The locations of each stockpile are presented in Figure 4 through Figure 8.

## **2.3 STOCKPILE SOIL QUALITY**

Four remedial excavations were conducted at four different locations when affected soil was discovered during the demolition process.

### **2.3.1 WL-RE-1 Stockpiles A and B**

Soil removal at remedial excavation WL-RE-1 began on August 12, 1997 and was completed on November 6, 1997.

Approximately 250 cubic yards of stockpiled soil associated with this additional excavation was removed with an excavator, transported and stockpiled west of the Building 34 footprint as presented in Figure 4 (Stockpile A), and approximately 36 cubic yards was stockpiled west of the Site access road as presented in Figure 5 (Stockpile B).

The following types of samples have been collected and analyzed to evaluate the soil quality in WL-RE-1 Stockpiles A and B:

- Excavated hot spot sample
- Stockpile sample

One hot spot sample was collected at the location presented in Figure 9 and the area around this location was later excavated. The analytical data for this sample are summarized in Table 2.

One stockpile sample was collected. The location of this sample is presented in Figure 4. Analytical data for this sample are summarized in Table 3.

A complete set of laboratory analytical reports is presented in Appendix A-1.

### **2.3.2 B44-RE-1 Stockpiles A, B, and C**

Soil removal at remedial excavation B44-RE-1 began on September 3, 1997 and was completed on October 14, 1997.

Approximately 643 total cubic yards of soil associated with this excavation was removed with an excavator, transported and stockpiled west of the Site access road as presented in Figure 6 (Stockpiles A, B, and C).

The following types of samples have been collected and analyzed to evaluate the soil quality in B44-RE-1 Stockpiles A, B, and C:

- Excavated hot spot sample
- Stockpile samples

One hot spot sample was collected at the location presented in Figure 10 and the area around this location was later excavated. Analytical data for this sample are summarized in Table 4.

Four stockpile samples were collected. The locations of these samples are presented in Figure 6. Analytical data for these samples are summarized in Table 5.

A complete set of laboratory analytical reports is presented in Appendix A-2.

### **2.3.3 B37-RE-6 Stockpile A**

Soil removal at remedial excavation B37-RE-6 was conducted on October 14, 1997 to remove soil affected with PCBs discovered by Kennedy Jenks (1996).

Approximately 89 cubic yards of stockpiled soil associated with this excavation was removed with an excavator, transported and stockpiled west of the Site access road as presented in Figure 7 (Stockpile A).

The following types of samples have been collected and analyzed to evaluate the soil quality in B37-RE-6 Stockpile A:

- Excavated hot spot sample (Kennedy Jenks, 1996)
- Stockpile sample

Hot spot sample 3J-2-10 was collected by Kennedy Jenks (1996). The location of this sample is presented in Figure 11 and the area around this sample was later excavated. Analytical data for this sample are summarized in Table 6.

One stockpile sample was collected. The location of this sample is presented in Figure 7. Analytical data for this sample are summarized in Table 7.

A complete set of laboratory analytical reports is presented in Appendix A-3.

#### **2.3.4 B37-RE-7 Stockpile A**

Soil removal at remedial excavation B37-RE-7 began on October 28, 1997 and was completed on October 29, 1997.

Approximately 179 total cubic yards of soil associated with this excavation was removed with an excavator, transported and stockpiled west of the Site access road as presented in Figure 8 (Stockpile A).

The following types of samples have been collected and analyzed to evaluate the soil quality in B37-RE-7 Stockpile A:

- Excavated hot spot samples

Two hot spot samples were collected at the locations presented in Figure 12 and the soil around these sample locations was later excavated. Analytical data for this sample are summarized in Table 8.

A complete set of laboratory analytical reports is presented in Appendix A-4.

### **2.4 CONFIRMATION SAMPLING**

#### **2.4.1 WL-RE-1 Remedial Excavation**

Five confirmation samples were collected at locations presented in Figure 13. Analytical data are summarized in Table 9. A complete set of analytical data is presented in Appendix B-1.

#### **2.4.2 B44-RE-1 Remedial Excavation**

Two confirmation samples were collected at locations presented in Figure 14. The analytical data for these samples are summarized in Table 10. A complete set of laboratory analytical reports is presented in Appendix B-2.

#### **2.4.3 B37-RE-6 Remedial Excavation**

Five confirmation samples were collected at locations presented in Figure 15. The analytical data for these samples are summarized in Table 11. A complete set of laboratory analytical reports is presented in Appendix B-3.

#### **2.4.4 B37-RE-7 Remedial Excavation**

Seven confirmation samples were collected at locations presented in Figure 16. The analytical data for these samples are summarized in Table 12. A complete set of laboratory analytical reports is presented in Appendix B-4.



## SECTION 3.0

### DATA SUMMARIES AND CONCLUSIONS

This section presents soil screening criteria and the methodology used throughout the project to evaluate: (1) whether the soil stockpiles were suitable for use as backfill, or required treatment and/or off-site disposal, and (2) whether all affected soil has been removed based on confirmation sample data, or if additional excavation of affected soil is warranted.

#### 3.1 SOIL SCREENING CRITERIA

The soil screening criteria have been developed to satisfy two primary objectives: (1) residual concentrations in backfill material and surface soil must be below levels projected to impact underlying drinking water sources, and (2) residual concentration in backfill materials and surface soil must be below levels projected to potentially impact human health under future construction and commercial/industrial activities at the Site.

In accordance with these objectives, soil screening criteria were developed for both drinking water and human health protection. The development of these soil screening criteria is discussed below followed by a summary of how these values were implemented.

##### 3.1.1 Drinking Water

The generalized hydrostratigraphic succession at the Site is as follows (Kennedy/Jenks, 1996; Dames & Moore, 1993; Department of Water Resources, 1961):

###### SURFACE

Bellflower Aquitard

Gage Aquifer

El Segundo Aquitard

Lynwood Aquifer

Depth to groundwater at the Site is approximately 65 feet. Hydrostratigraphic information from voluminous data collected at the neighboring Del Amo and Montrose Chemical Superfund Sites can be correlated with subsurface information collected at the Site. Hydrostratigraphic correlations suggest that the shallowest groundwater at the Site occurs in the Bellflower Aquitard, which is not recognized as a drinking water source in the region (Dames & Moore, 1993).

Although the depth to the top of the Gage Aquifer should vary from approximately 120 to 150 feet (from west to east) across the Site, the Gage Aquifer is not utilized as a source of drinking water in the region (Dames & Moore, 1993). Consequently, the shallowest drinking water resource in the region would therefore be the Lynwood Aquifer, projected to occur at the depths of approximately 210 to 240 feet (from west to east) across the Site.

Based on the depth to the first drinking water source, the following permissible concentrations to 12 feet below ground surface have been approved by the RWQCB:

Analytes	Permissible Level
TRPH	
C4 - C12	2,000 mg/kg
C13 - C22	10,000 mg/kg
C22+	50,000 mg/kg
Metals	TTLC and STLC

Notes:

TTLC: Total Threshold Limit Concentration per CCR Title 22.

STLC: Soluble Threshold Limit Concentration per CCR Title 22.

A Waste Extraction Test (WET) is performed on samples with total metal concentration(s) greater than 10 times the STLC but less than the TTLC, per CCR Title 22.

### 3.1.2 Human Health

Site-specific health-based soil screening values were developed by IESI using standard United States Environmental Protection Agency (USEPA) and California Environmental Protection Agency (Cal/EPA) methodologies. These values were derived assuming future commercial industrial land use with an interim construction phase. Each value will be used as a predictor of the risk posed by individual VOC, SVOC, PCB, and metal contaminants in soil. The additive effects of multiple contaminants have been accounted for by setting conservative target risk levels at  $1 \times 10^{-6}$  for carcinogens and 0.2 for toxicants. The final cumulative risks for all residual contaminants at the Site will be addressed in the post-remedial risk assessment. Table 13 summarizes the Site-specific health-based soil screening values to be used at the Site. A more detailed discussion of the methodologies used to derive these values has been presented in the *Health-Based Remediation Goals for Surface Soils* document (IESI, 1997(b)).

### 3.1.3 Evaluation Process

#### STOCKPILE SOIL

All soil excavated at the Site was subjected to the soil screening evaluation process depicted in Figure 17. This evaluation process incorporates both drinking water and human health-based criteria. Soils that failed any portion of this test were subjected to treatment prior to

use as backfill, or were disposed of off-site. Once soils passed all aspects of the evaluation procedure, they were used for backfill.

Additionally, metal concentration(s) in stockpiled soils were used to further characterize the waste soil as follows:

- a) Stockpiled soils were classified as non-RCRA hazardous waste if representative soil samples contained any metal in total concentration equal to or greater than its respective TTLC per CCR Title 22.
- b) Representative soil samples were analyzed for soluble metal concentration using the Waste Extraction Test (WET) if the total concentration of any metal was equal to or greater than 10 times its respective STLC but less than its TTLC per CCR Title 22. Stockpiled soil was classified as non-RCRA hazardous waste if representative soil samples contained any metal in soluble concentration using the WET equal to or greater than its respective STLC per CCR Title 22.
- c) Additionally, representative soil samples which were analyzed using the WET were also analyzed for soluble metal concentrations using the Toxic Characteristic Leaching Procedure (TCLP). Stockpiled soil was classified as a RCRA characteristic hazardous waste if the soluble concentration of any metal using the TCLP was equal to or greater than the toxicity characteristic (TC) per CCR Title 22.

### CONFIRMATION SAMPLES

All confirmation soil data at the Site were subjected to the soil screening evaluation process depicted in Figure 18. This evaluation process incorporates both drinking water and human health-based criteria. Additional soil excavation and/or treatment was conducted at locations where confirmation sample data failed any portion of this test, and the maximum excavation depth of 12 feet had not been reached.

## **3.2 STOCKPILE EVALUATIONS**

Chemicals of concern at the Site can be summarized as follows:

- Petroleum hydrocarbons
- VOCs
- SVOCs
- PCBs
- Metals

The sampling and analysis program for remedial excavations discussed in this report was conservatively focused on these chemicals of concern by implementing the following analytical schedule:

- All hot spot and stockpile samples were analyzed for TRPH and metals.
- All hot spot and stockpile samples which contained TRPH in concentration greater than 10,000 mg/kg were subsequently analyzed for carbon chain length.
- All stockpile samples were additionally analyzed for VOCs and SVOCs.
- Stockpile samples were selectively analyzed for PCBs.
- Hot spot samples were selectively analyzed for VOCs, SVOCs, hydrocarbon fuel characterization, and PCBs, depending on the potential for occurrence of these chemicals at the sampling location.

Stockpile evaluations and dispositions are discussed below and summarized in Table 14.

### **3.2.1 WL-RE-1 Stockpiles A and B**

Soil samples (hot spot and stockpile) associated with Stockpiles A and B are presented in Table 2 and Table 3, respectively. These data are summarized and evaluated below.

Petroleum Hydrocarbons: Excavated hot spot sample WL-GS-1-2' (Stockpile A) contained the highest concentration of TRPH (3,000 mg/kg). Although this sample contained TRPH below the permissible limit of 10,000 mg/kg, the sample was submitted for carbon chain speciation to be conservative. This sample did not meet or exceed the permissible limits for specific hydrocarbon chains. All other samples contained TRPH in concentration below the permissible limit and therefore were not speciated.

VOCs: VOCs were detected in two samples; however, all VOC concentrations were below Site-specific health-based soil screening values.

SVOCs: SVOCs were detected in one sample, however, all SVOC concentrations were below Site-specific health-based soil screening values.

PCBs: PCBs were not detected.

Metals: Stockpile sample WL-RE1-SP1 (Stockpile A) contained arsenic (53 mg/kg) above the Site-specific health-based soil screening value of 14 mg/kg. This sample also exceeded 10 times the STLC value for arsenic; however, this sample did not meet or exceed the STLC when analyzed using the WET, or the TC when analyzed using the TCLP. None of the other samples met or exceeded TTLC, 10 times the STLC, or Site-specific health-based soil screening values.

Conclusion: Stockpile A contained arsenic above the Site-specific health-based soil screening value and was removed from the Site and disposed of as non-hazardous waste. Although Stockpile B was not sampled, it too was removed from the Site and disposed of as

non-hazardous waste to be conservative. Non-hazardous waste disposal documentation is presented in Appendix C. Approximately 40 cubic yards of Stockpiles A and B remain on-site and will be removed as non-hazardous waste. Off-site disposal documentation for the remaining soil will be provided in an addendum to this report.

### **3.2.2 B44-RE-1 Stockpiles A, B, and C**

Soil samples (hot spot and stockpile) associated with Stockpiles A, B, and C are presented in Table 4 and Table 5, respectively. These data are summarized and evaluated below.

Petroleum Hydrocarbons: Stockpile sample B44-RE1-SP2 (Stockpile B) contained the highest concentration of TRPH (40 mg/kg). This concentration is below the permissible limit and therefore TRPH was not speciated.

VOCs: VOCs were not detected.

SVOCs: SVOCs were not detected.

PCBs: PCBs were not detected.

Metals: None of the samples met or exceeded TTLC, 10 times the STLC, or Site-specific health-based soil screening values.

Conclusion: The data show that Stockpiles A, B, and C met the soil screening criteria presented in Section 3.1 of this report and therefore were used as backfill material. A portion of Stockpile C has not yet been backfilled; the backfilled location of this remaining soil will be provided as an addendum to this report.

### **3.2.3 B37-RE-6 Stockpile A**

Soil samples (hot spot and stockpile) associated with Stockpile A are presented in Table 6 and Table 7. These data are summarized and evaluated below.

Petroleum Hydrocarbons: Stockpile sample B37-RE6-SP1 contained the highest concentration of TRPH (75 mg/kg). This concentration is below the permissible limit and therefore TRPH was not speciated.

VOCs: VOCs were not detected.

SVOCs: SVOCs were not detected.

PCBs: PCBs were detected in the hot spot sample collected by Kennedy Jenks (1996) in concentration of 9.80 mg/kg. This concentration exceeds the Site-specific health-based soil screening value for aroclor 1254 of 0.87 mg/kg. PCBs were detected in stockpile sample B37-RE6-SP1 in concentration of 0.1 mg/kg, which is below the Site-specific health-based soil screening value for aroclor 1254 of 0.87 mg/kg.

Metals: None of the samples met or exceeded TTLC, 10 times the STLC, or Site-specific health-based soil screening values.

Conclusion: Stockpile sample B37-RE6-SP1 was considered more representative of Stockpile A soil quality by IESI; the concentration of PCBs in this stockpile sample was below the Site-specific health-based soil screening value for aroclor 1254. The data show that Stockpile A met the soil screening criteria presented in Section 3.1 of this report and therefore was used as backfill material.

### **3.2.4 B37-RE-7 Stockpile A**

Soil samples (hot spot) associated with Stockpile A are presented in Table 8. These data are summarized and evaluated below.

Petroleum Hydrocarbons: Hot spot sample B37-GS-207-5' contained the highest concentration of TRPH (20,000 mg/kg). This sample did not meet or exceed the permissible limits for specific hydrocarbon chains.

VOCs: VOCs were not detected.

SVOCs: SVOCs were not detected.

PCBs: PCBs were not suspected to be of concern at this remedial excavation; therefore, samples were not submitted for analysis of PCBs.

Metals: None of the samples met or exceeded TTLC, 10 times the STLC, or Site-specific health-based soil screening values.

Conclusion: The data show that Stockpile A met the soil screening criteria presented in Section 3.1 of this report and therefore was used as backfill material.

## **3.3 IN-SITU SOIL QUALITY**

The post-remedial excavation confirmation sampling analytical program (see Table 1) was designed to ensure that residual soils (upper 12 feet) meet the soil screening criteria.

### **3.3.1 WL-RE-1 Remedial Excavation**

Confirmation sample data are presented in Table 9 and can be summarized as follows:

Petroleum Hydrocarbons: The maximum concentration of TRPH in a confirmation sample collected from this remedial excavation was 250 mg/kg (sample WL-GS-13-5'). This concentration is below the permissible limits for petroleum hydrocarbons and therefore TRPH was not speciated.

VOCs: VOCs were not detected.

SVOCs: SVOCs were detected in two samples; however, all SVOC concentrations were below Site-specific health-based soil screening values.

PCBs: PCBs were detected in concentration of 0.050 mg/kg. This concentration is below the Site-specific health-based soil screening value for aroclor 1254 of 0.87 mg/kg.

Metals: All concentrations were below TTLC, 10 times the STLC, and Site-specific health-based soil screening values.

**Conclusion:** The data show that the residual soils in the WL-RE-1 excavation met the soil screening criteria established in Section 3.1 of this report. Accordingly, this remedial excavation was backfilled.

### **3.3.2 B44-RE-1 Remedial Excavation**

Confirmation sample data are presented in Table 10 and can be summarized as follows:

Petroleum hydrocarbons: The maximum concentration of TRPH in a confirmation sample collected from this remedial excavation was 12 mg/kg (sample B44-GS-6-8'). This concentration is below the permissible limits for petroleum hydrocarbons and therefore TRPH was not speciated.

VOCs: VOCs were detected in one sample; however, all VOC concentrations were below Site-specific health-based soil screening values.

SVOCs: SVOCs were not detected.

PCBs: PCBs were not detected.

Metals: All concentrations were below TTLC, 10 times the STLC, and Site-specific health-based soil screening values.

**Conclusion:** The data show that the residual soils in the B44-RE-1 excavation met the soil screening criteria established in Section 3.1 of this report. Accordingly, this remedial excavation was backfilled.

### **3.3.3 B37-RE-6 Remedial Excavation**

Confirmation sample data are presented in Table 11 and can be summarized as follows:

Petroleum hydrocarbons: The only concentration of TRPH in a confirmation sample collected from this remedial excavation was 20 mg/kg (sample B37-GS-183C-10'). This concentration is below the permissible limits for petroleum hydrocarbons and therefore TRPH was not speciated.

VOCs: VOCs were not detected.

SVOCs: SVOCs were not detected.

PCBs: PCBs were not detected.

Metals: All concentrations were below TTLC, 10 times the STLC, and Site-specific health-based soil screening values.

**Conclusion:** The data show that the residual soils in the B37-RE-6 excavation met the soil screening criteria established in Section 3.1 of this report. Accordingly, this remedial excavation was backfilled.

### **3.3.4 B37-RE-7 Remedial Excavation**

Petroleum hydrocarbons: The maximum concentration of TRPH in a confirmation sample collected from this remedial excavation was 50,000 mg/kg (sample B37-GS-214-6'). This sample did not meet or exceed the permissible limits for specific hydrocarbon chains.

VOCs: VOCs were detected in one sample; however, all VOC concentrations were below Site-specific health-based soil screening values.

SVOCs: SVOCs were not detected.

PCBs: PCBs were not detected.

Metals: All concentrations were below TTLC, 10 times the STLC, and Site-specific health-based soil screening values.

**Conclusion:** The data show that the residual soils in the B37-RE-7 excavation met the soil screening criteria established in Section 3.1 of this report. Accordingly, this remedial excavation was backfilled.



## SECTION 4.0

### REFERENCES

Department of Water Resources, Southern District, Bulletin 104, Planned Utilization of the Ground Water Basins of the Coastal Plain of Los Angeles County, Appendix A, Ground Water Geology, 1961.

Dames & Moore, Phase I Remedial Investigation Report, Del Amo Study Area, Los Angeles, California, October 1993.

Geraghty & Miller, Baseline Risk Assessment, International Light Metals Division Facility, Prepared for Lockheed Martin Corporation, March 1996.

Integrated Environmental Services, Inc., Sampling and Analysis Plan for Demolition Activities at the Douglas Aircraft Company C-6 Facility, 1997(a).

Integrated Environmental Services, Inc., Health-Based Remediation Goals for Surface Soils, 1997(b).

Kennedy/Jenks Consultants, Final Phase II Subsurface Investigation, Douglas Aircraft Company C-6 Facility, Parcel A, Torrance, California, June 5, 1996.

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## Figures

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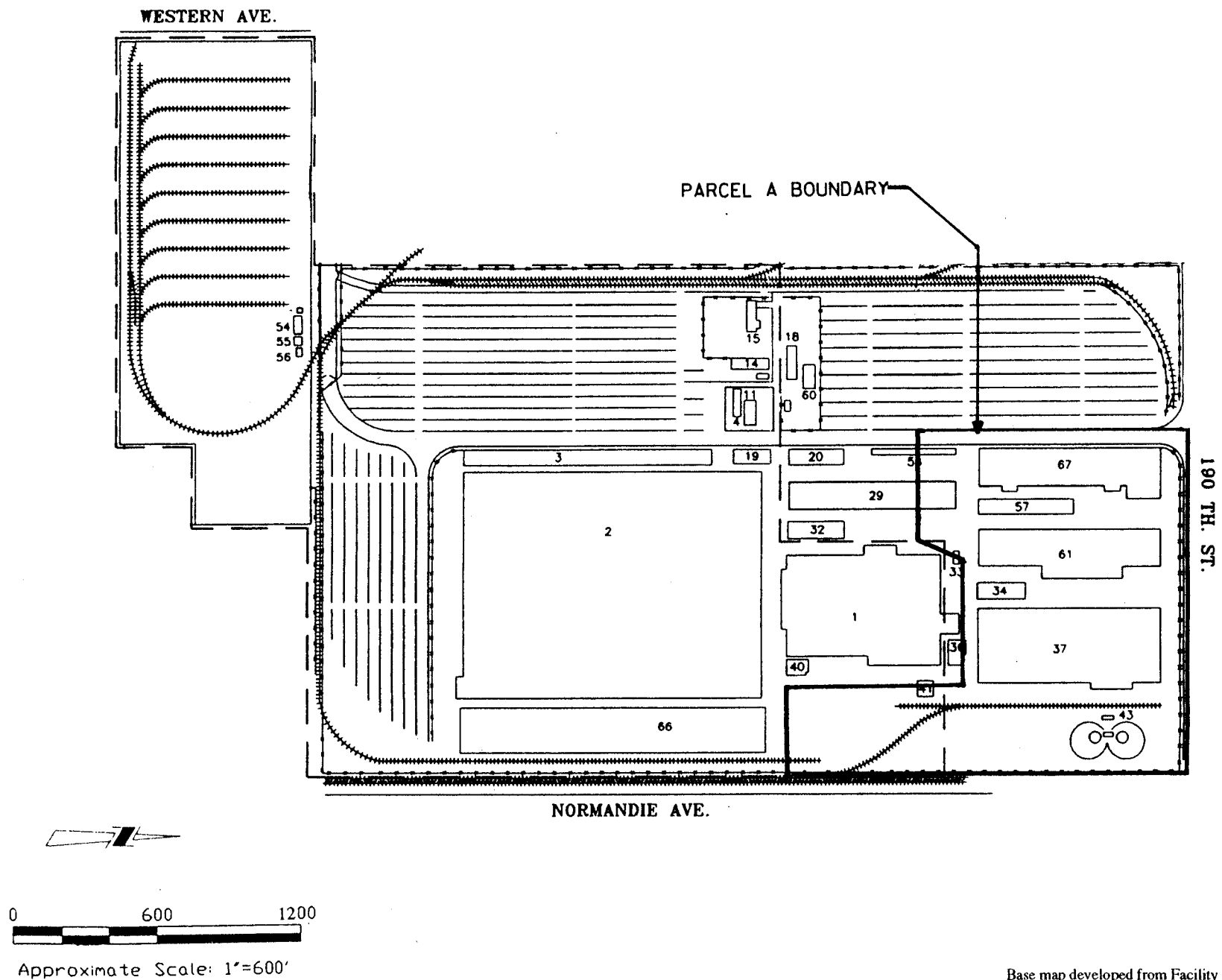
**MONTGOMERY WATSON**



MONTGOMERY WATSON

C-6 FACILITY MAP

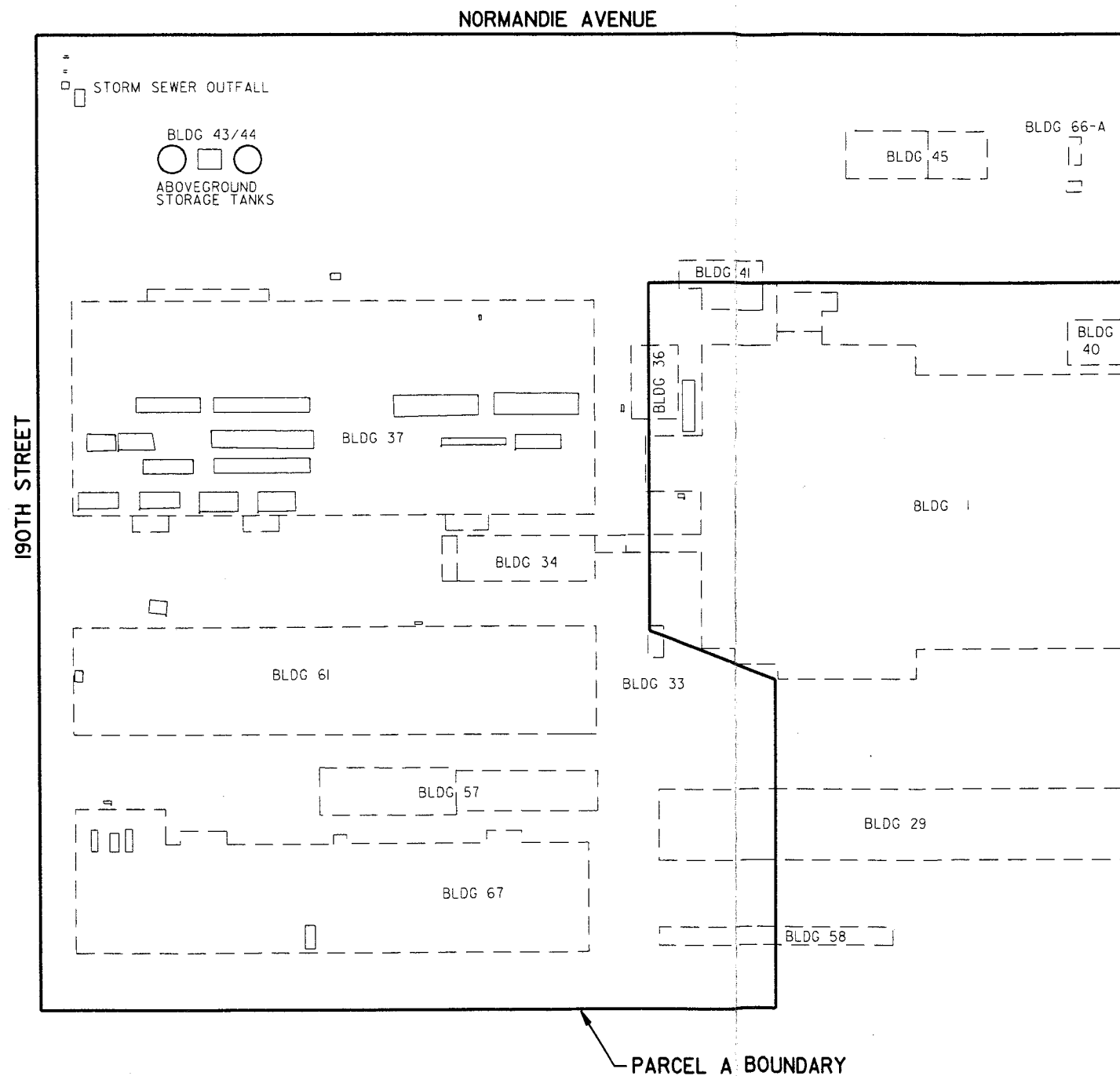
FIG. 1



Base map developed from Facility Layout and Subject Property Map by Kennedy/Jenks Consultants, May 1996.

BOE-C6-0083917

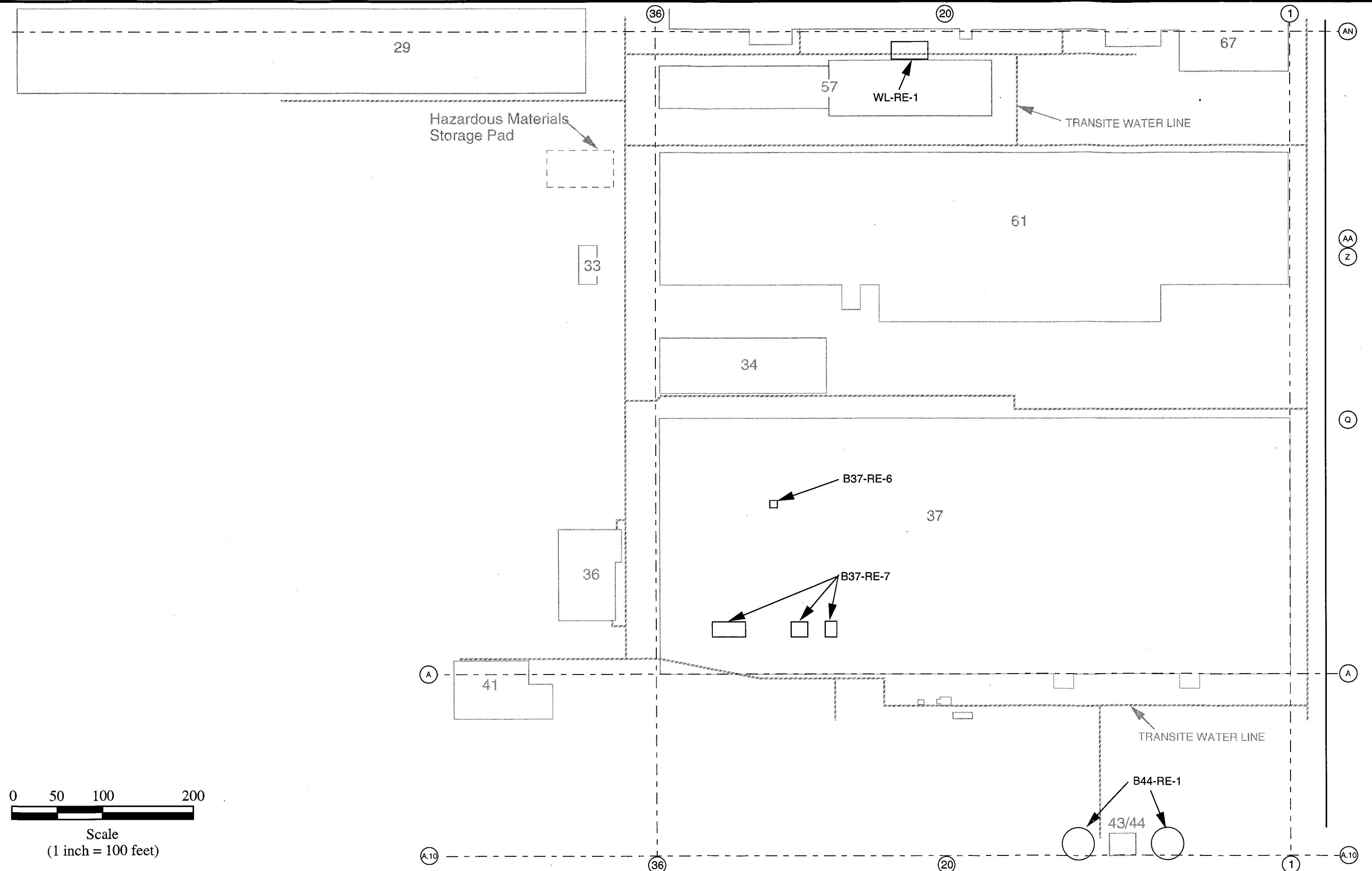
JOB No. FILE No.



BASE MAP DEVELOPED FROM TAIT & ASSOCIATES INC.  
SURVEY DRAWING DATED 10/22/96.

REV				DATE	BY	DESCRIPTION	SCALE: AS SHOWN	DESIGNED DRAWN N. CHRAKIAN CHECKED S. REINERS	SUBMITTED PROJECT ENGINEER RECOMMENDED MONTGOMERY WATSON	R. C. E. NO. DATE	APPROVED DATE	APPROVED DATE	BOEING REALTY CORPORATION PARCEL A SITE MAP	SHEET FIG. 2 OF • SHEETS
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MDRC/BACKFILL/STOCKPIL/7trp/fig3



BOEING REALTY CORPORATION  
C-6 FACILITY

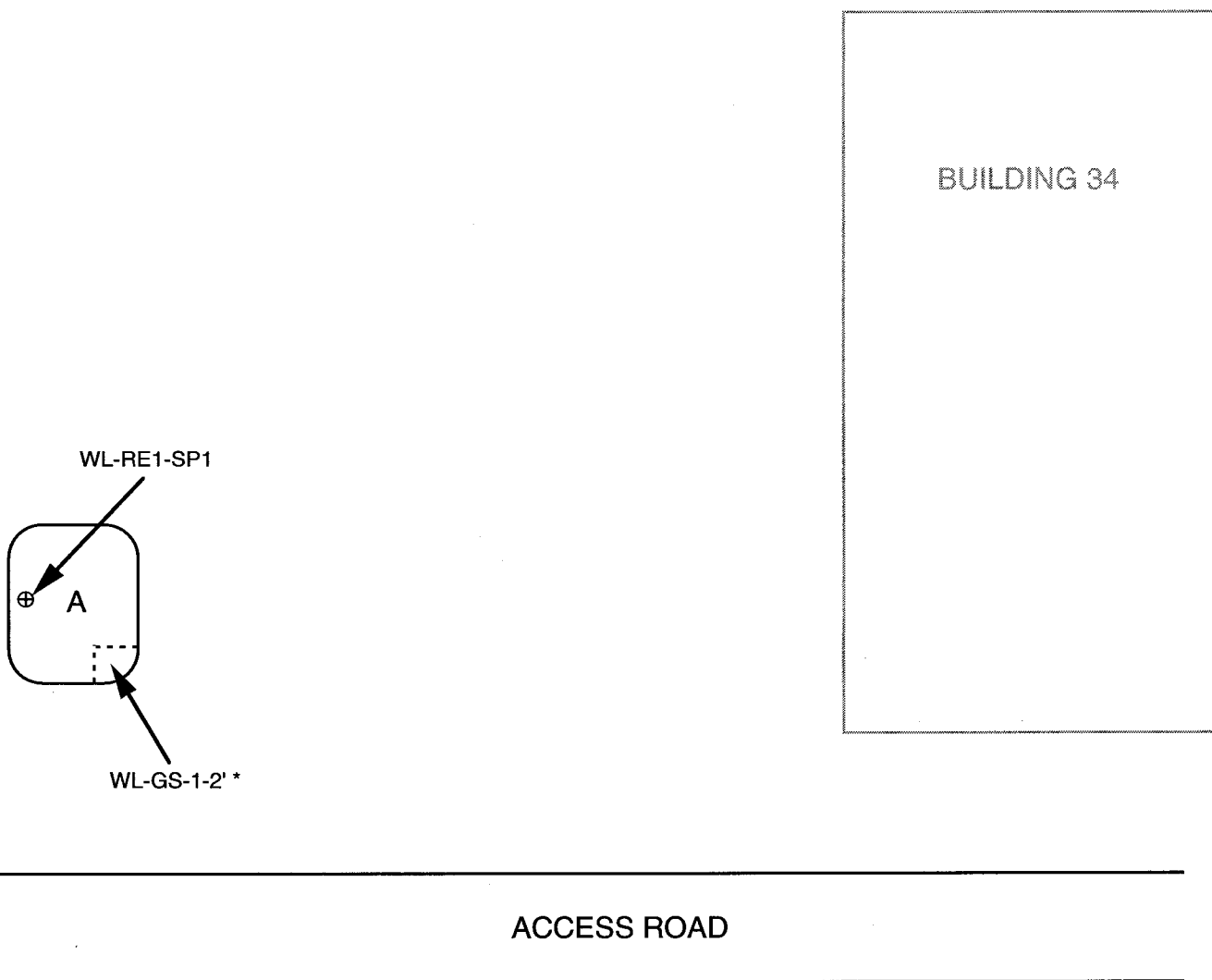
Remedial Excavations WL-RE-1, B44-RE-1, B37-RE-6, and B37-RE-7 Locations

FIGURE 3

BOE-C6-0083918

Not to Scale

\* See Figure 9 for this Hot Spot Sample Location



g:/MDRC/BACKFILL/STOCKPIL/7thp/fig4-8



BOEING REALTY CORPORATION  
C-6 FACILITY  
**Remedial Excavation WL-RE-1  
Stockpile A and Sample Location**

**FIGURE 4**

Not to Scale

W. 190th St

B

ACCESS ROAD



g:/MDRC/BACKFILL/STOCKPIL/7hnp/fig+8

BOEING REALTY CORPORATION  
C-6 FACILITY

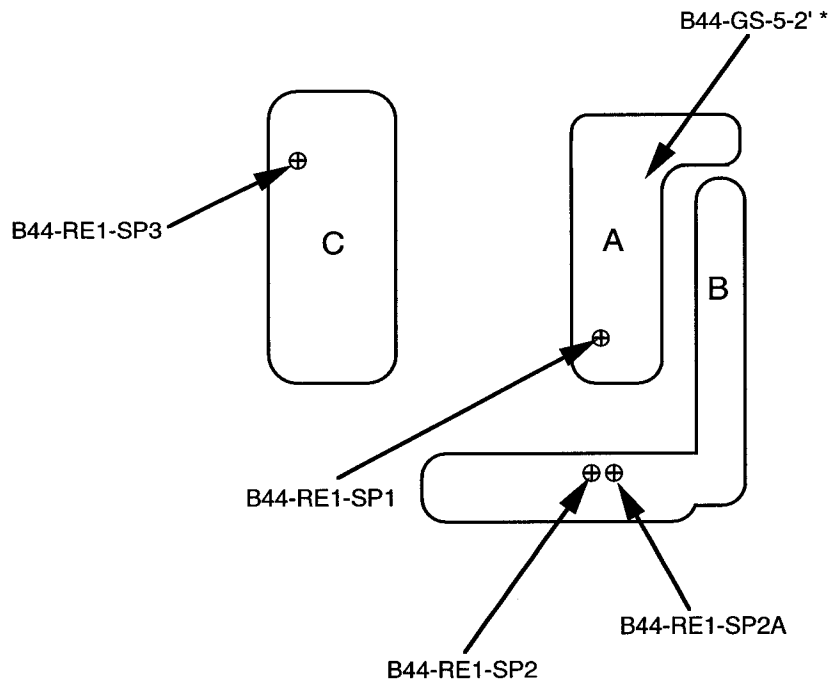
**FIGURE 5**

**Remedial Excavation WL-RE-1 Stockpile B Location**

Not to Scale

W. 190th St

\* See Figure 10 for this Hot Spot Sample Location



ACCESS ROAD



BOEING REALTY CORPORATION  
C-6 FACILITY

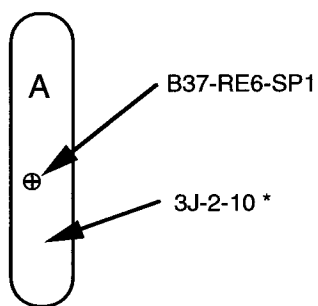
**Remedial Excavation B44-RE-1  
Stockpiles and Sample Locations**

**FIGURE 6**



Not to Scale

\* See Figure 11 for this Kennedy-Jenks sample location



ACCESS ROAD



g:/MDRC/BACKFILL/STOCKPIL/7hrp/fig4-8

BOEING REALTY CORPORATION  
C-6 FACILITY

**Remedial Excavation B37-RE-6  
Stockpile and Sample Location**

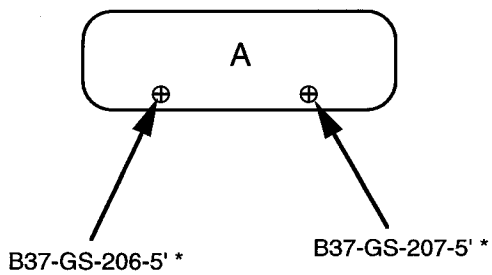
**FIGURE 7**

Not to Scale

W. 190th St

\* See Figure 12 for these Hot Spot Sample Locations

ACCESS ROAD



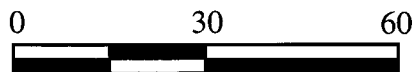
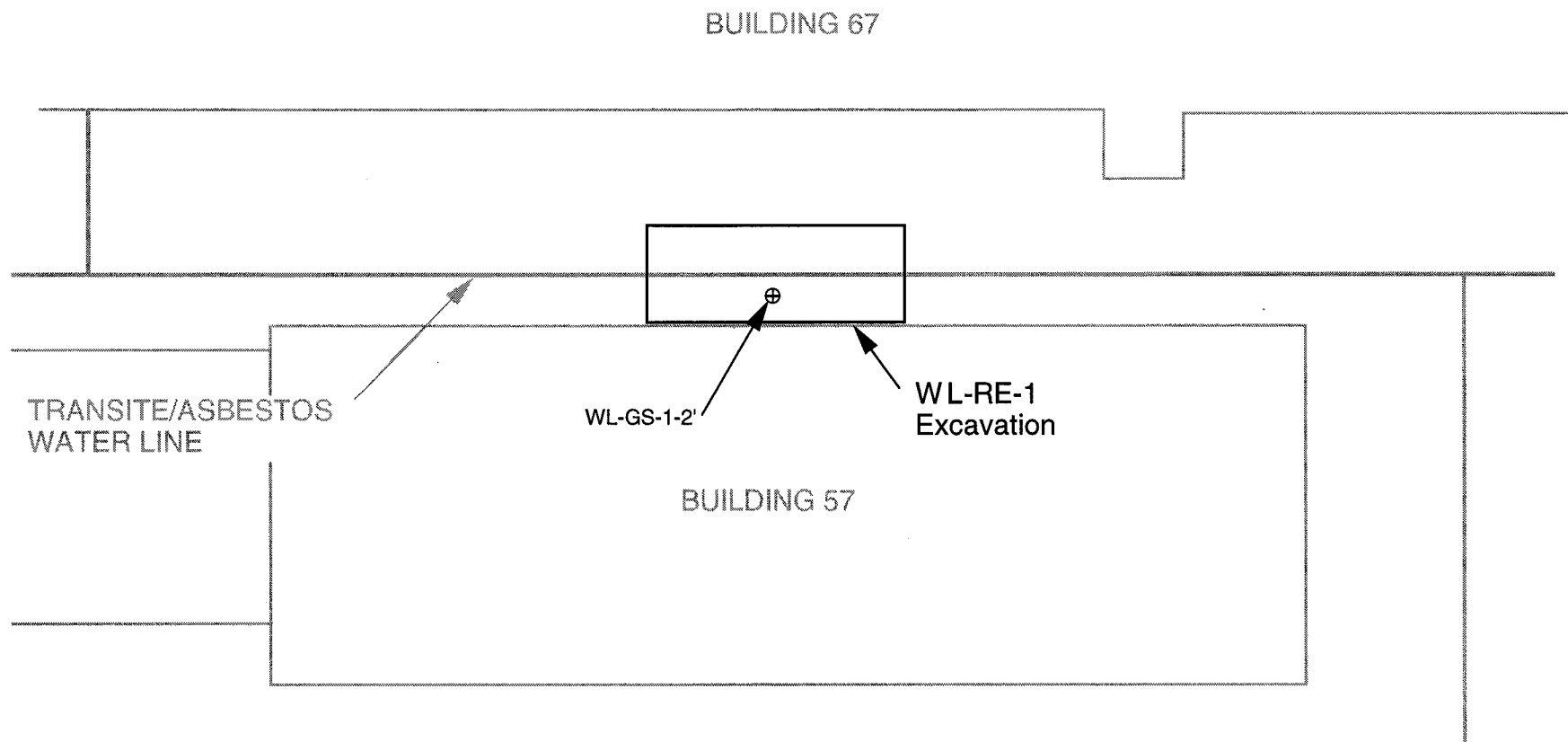
g:/MDRC/BACKFILL/STOCKPIL/7hnp/fig4-8



BOEING REALTY CORPORATION  
C-6 FACILITY

**Remedial Excavation B37-RE-7 Stockpile Location**

**FIGURE 8**



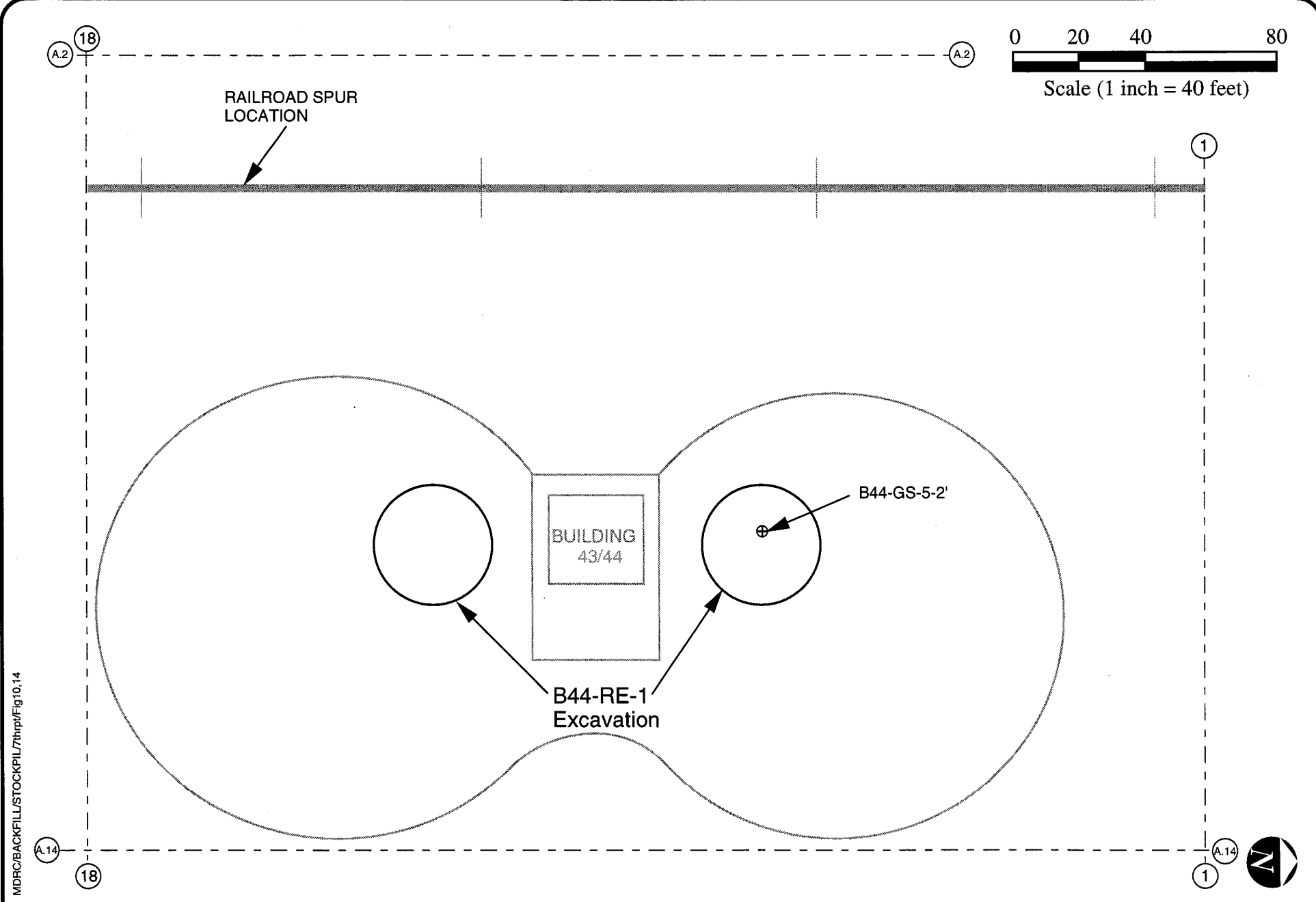
Scale  
(1 inch = 30 feet)



BOEING REALTY CORPORATION  
C-6 FACILITY

**Remedial Excavation WL-RE-1 Excavated Hot Spot Sample Location**

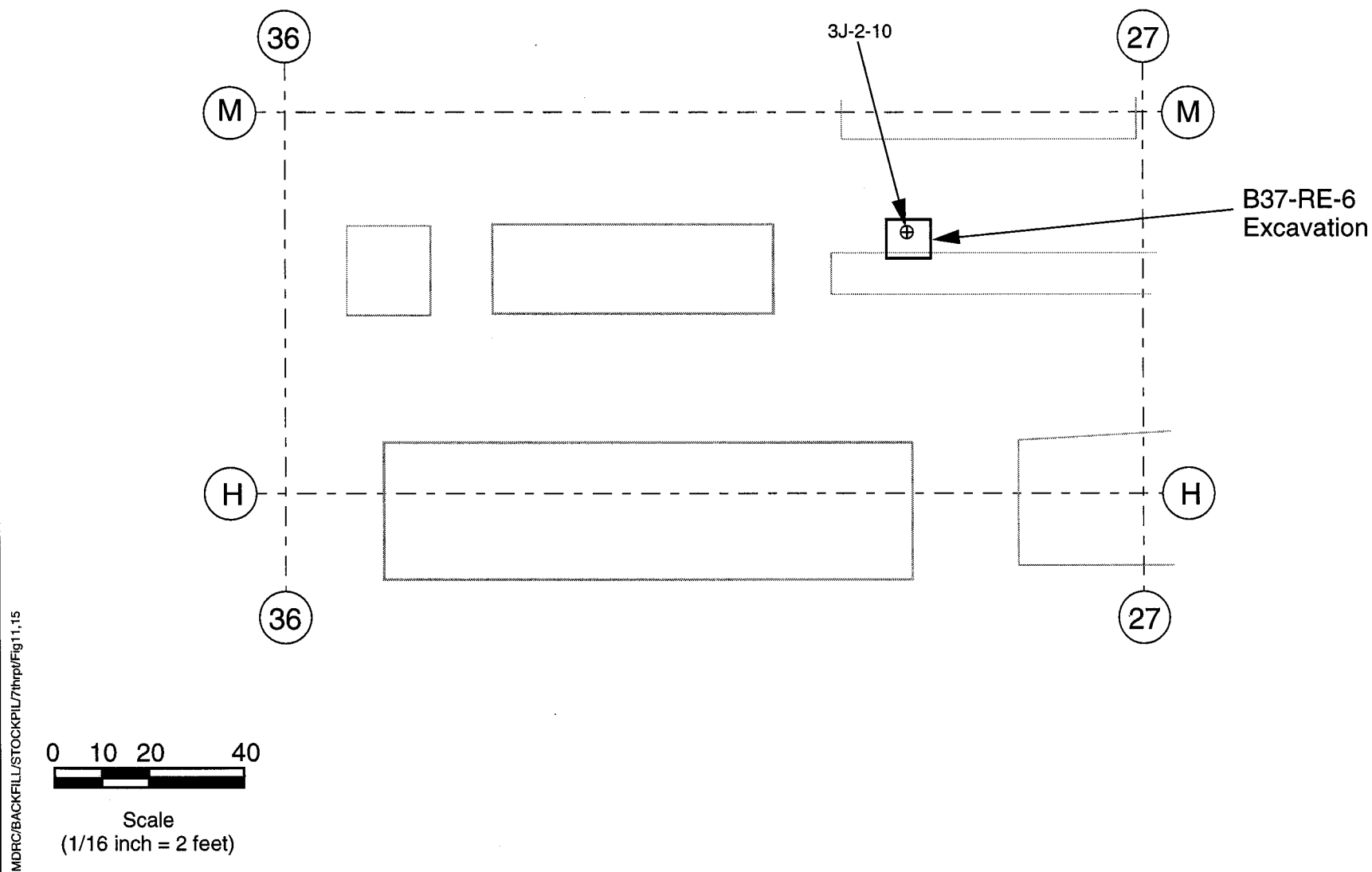
**FIGURE 9**



BOEING REALTY CORPORATION  
C-6 FACILITY

**Remedial Excavation B44-RE-1 Excavated Hot Spot Sample Location**

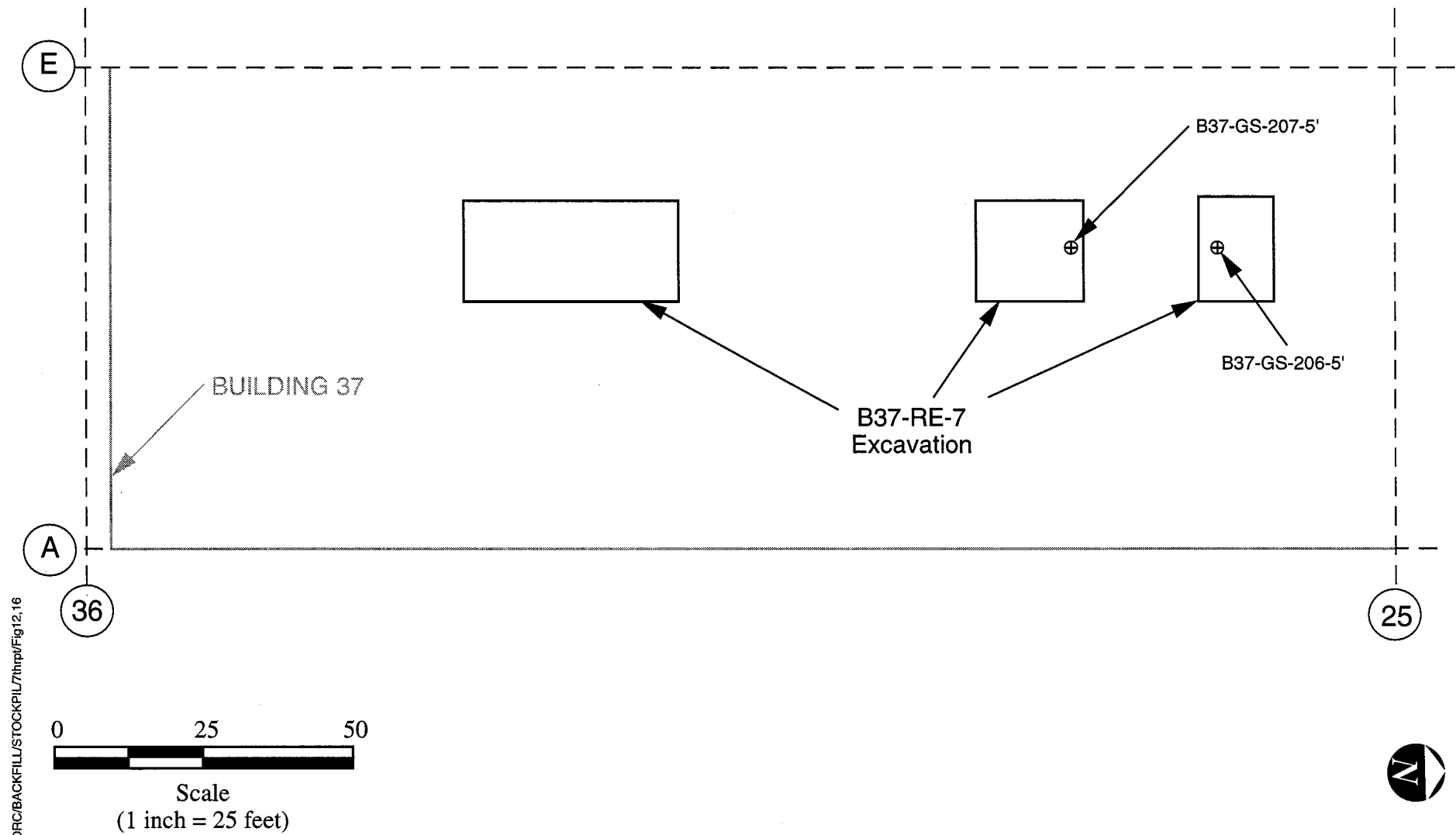
**FIGURE 10**



BOEING REALTY CORPORATION  
C-6 FACILITY

**Remedial Excavation B37-RE-6 Excavated Kennedy-Jenks Sample Location**

**FIGURE 11**

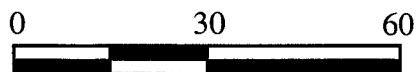
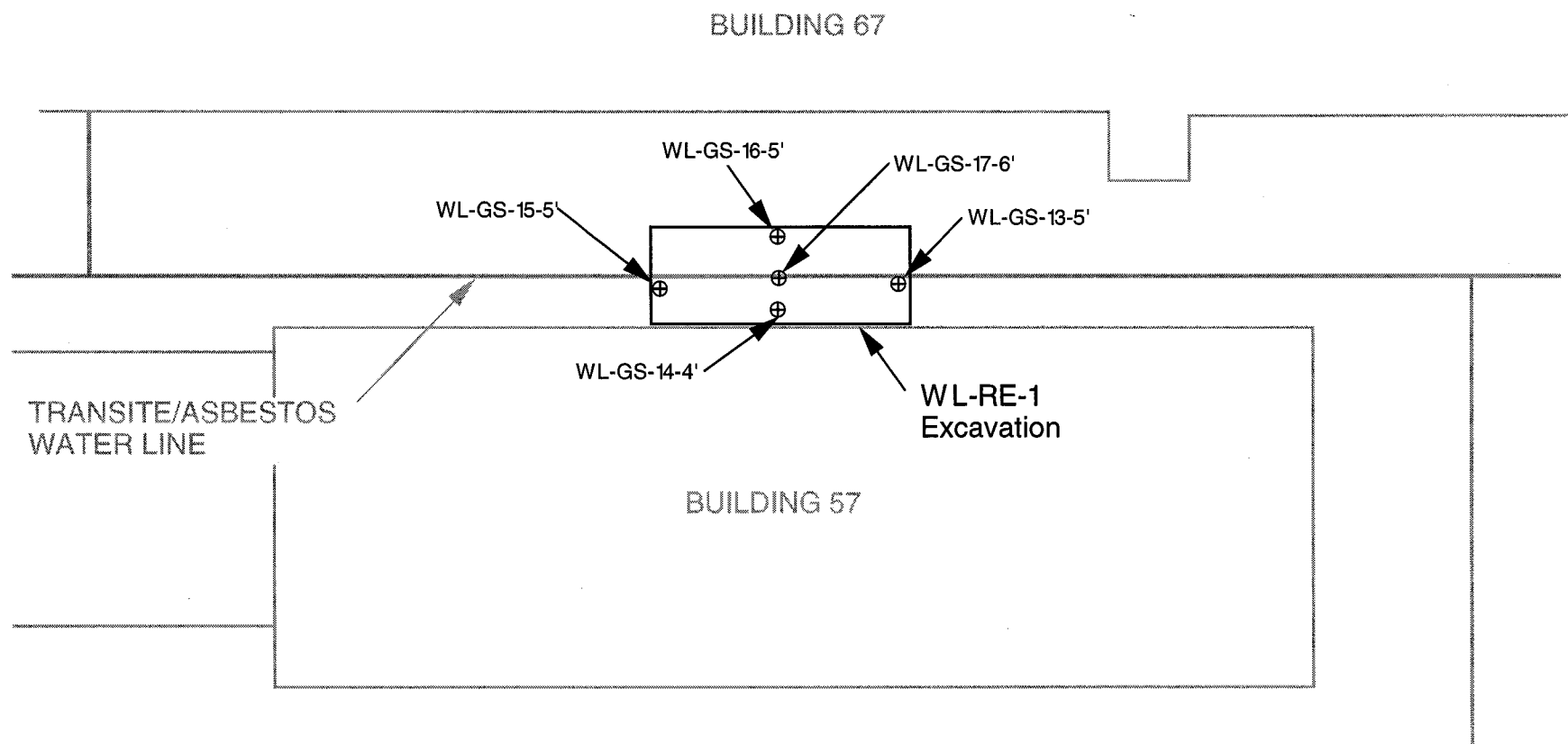


MDRC/BACKFILL/STOCKPIL/7thrp/fig12.16

BOEING REALTY CORPORATION  
C-6 FACILITY

**Remedial Excavation B37-RE-7 Excavated Hot Spot Sample Locations**

**FIGURE 12**



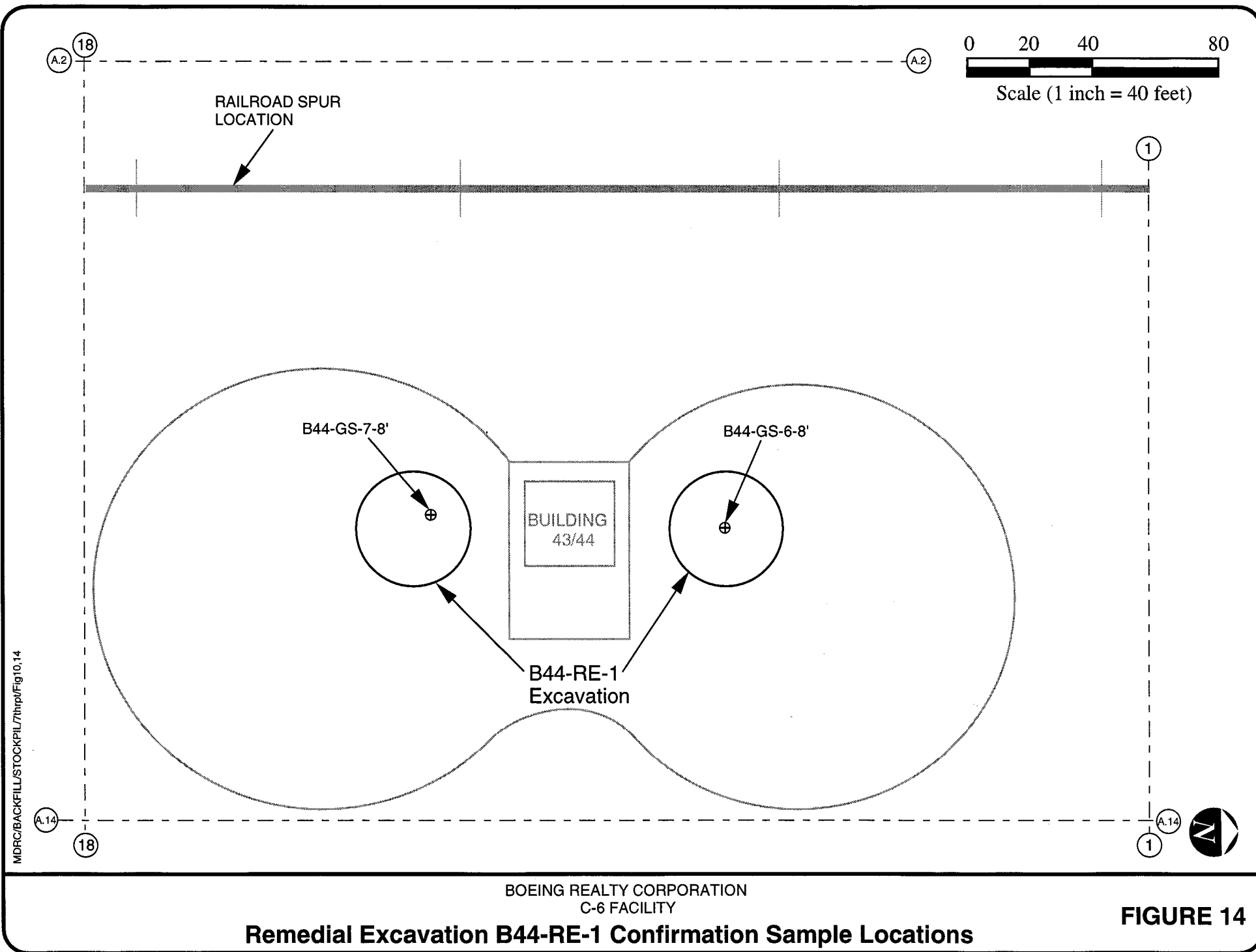
Scale  
(1 inch = 30 feet)



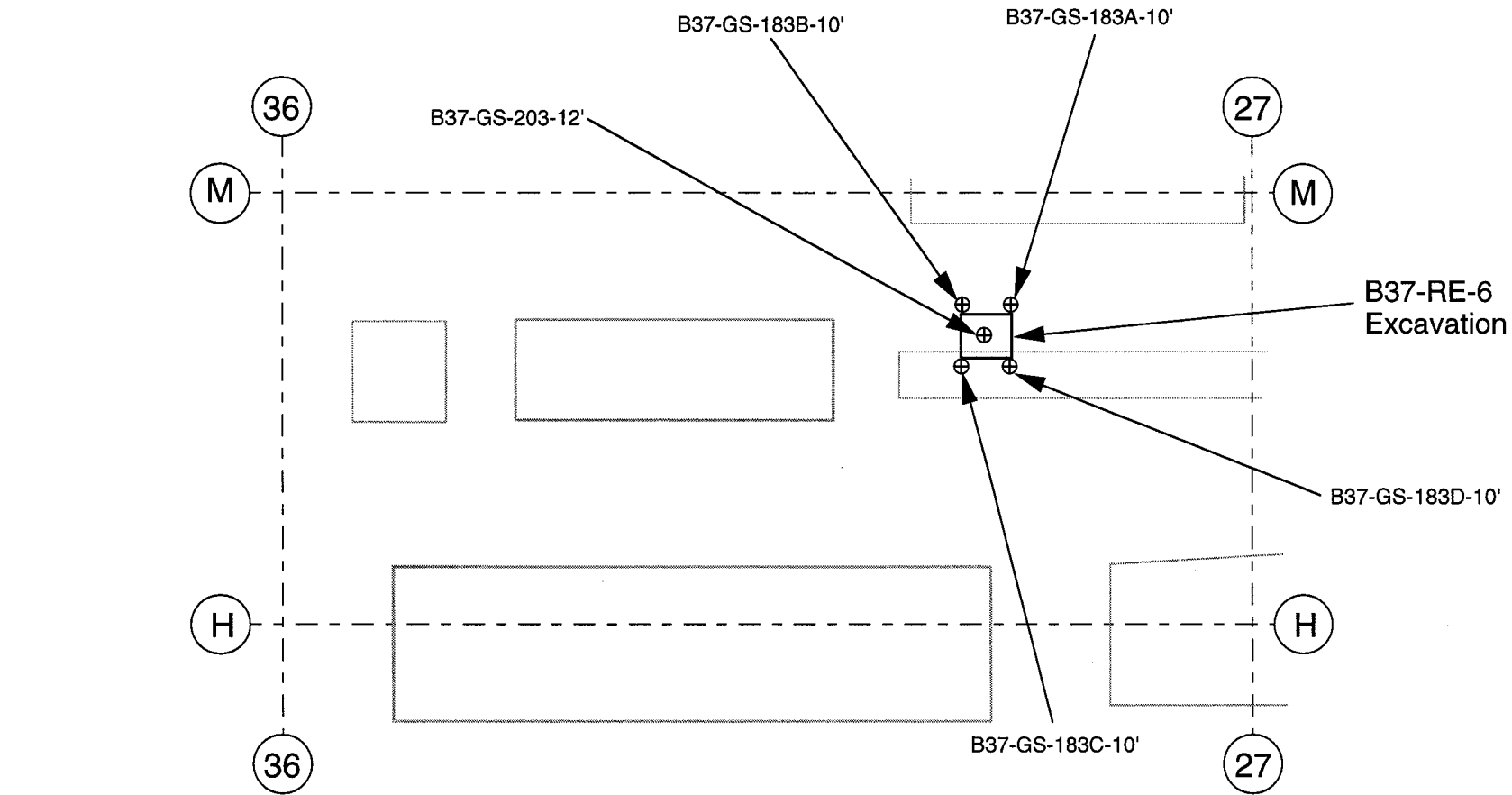
BOEING REALTY CORPORATION  
C-6 FACILITY

**Remedial Excavation WL-RE-1 Confirmation Sample Locations**

**FIGURE 13**



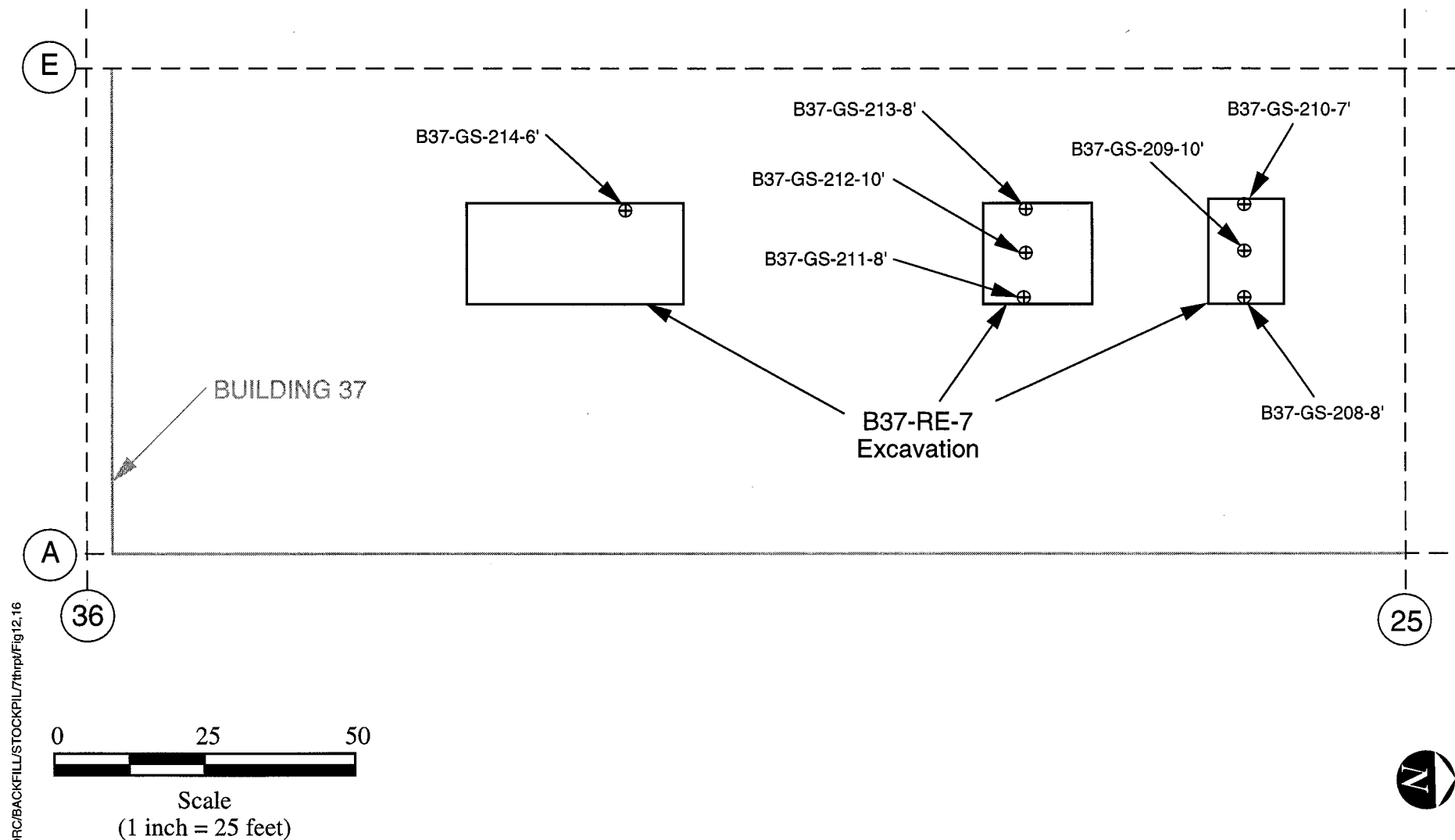




BOEING REALTY CORPORATION  
C-6 FACILITY

**Remedial Excavation B37-RE-6 Confirmation Sample Locations**

**FIGURE 15**

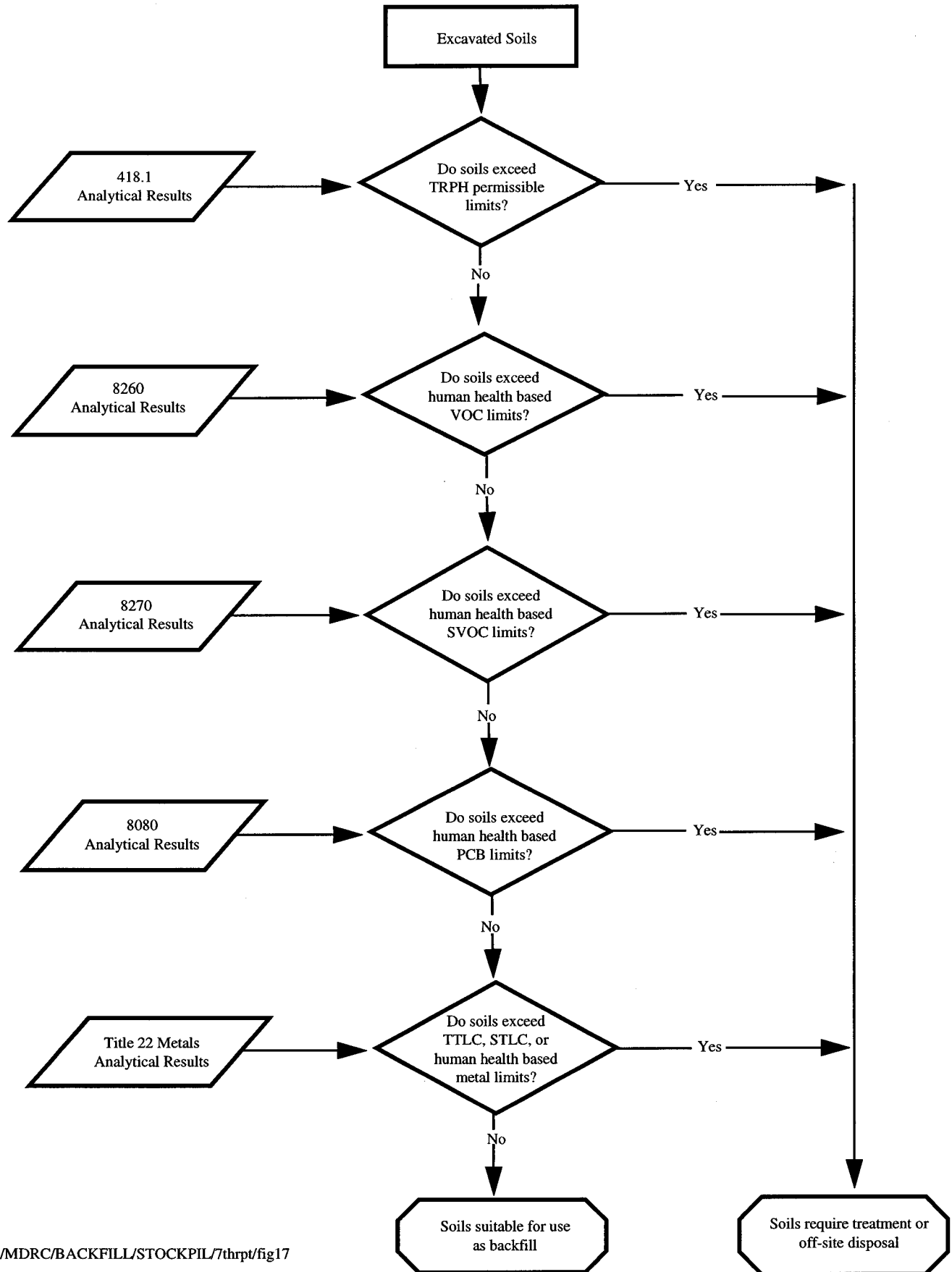


BOEING REALTY CORPORATION  
C-6 FACILITY

**Remedial Excavation B37-RE-7 Confirmation Sample Locations**

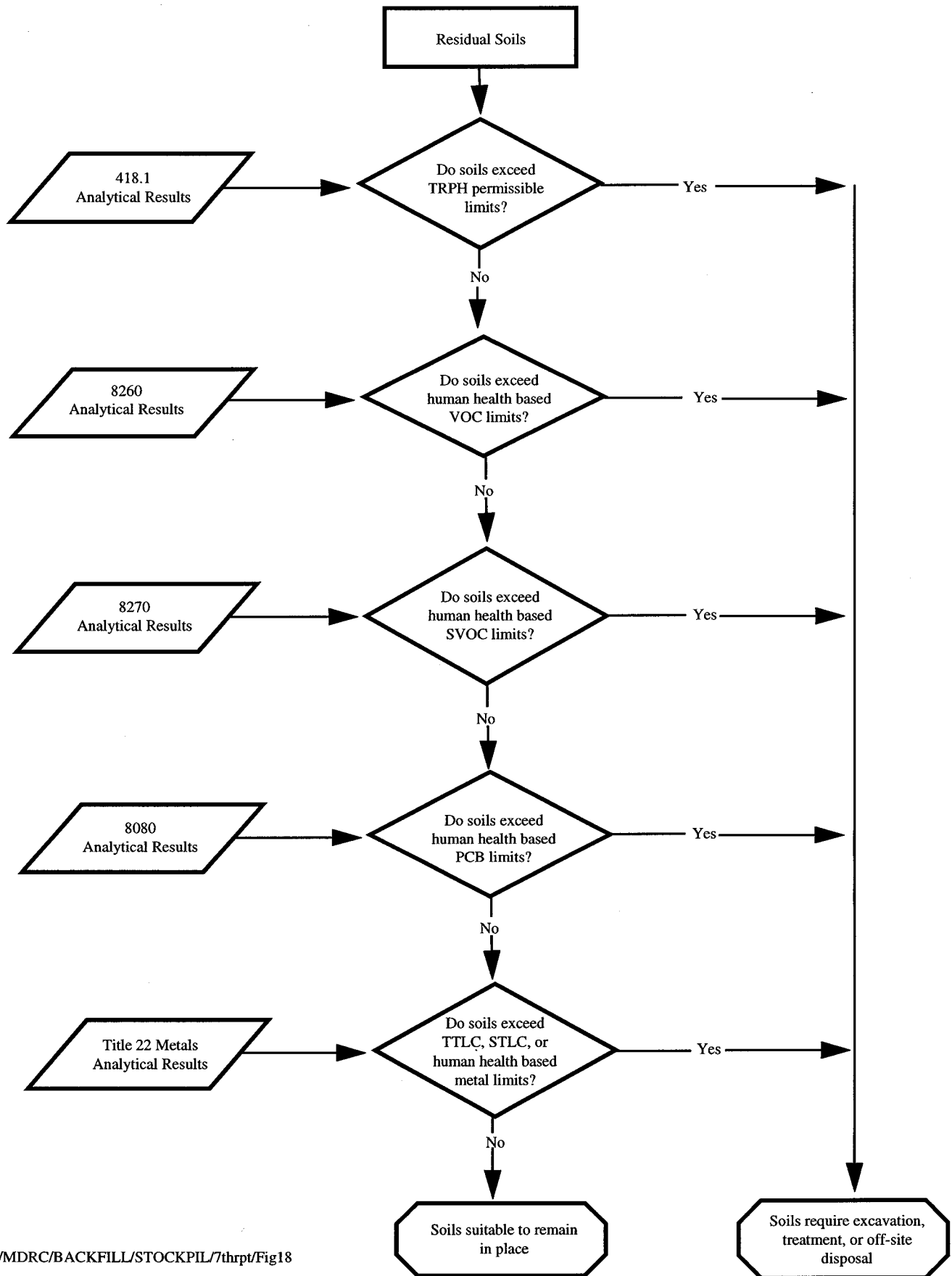
**FIGURE 16**

**FIGURE 17**  
**Soil Screening Evaluation Process - Excavated Soil**



g:/MDRC/BACKFILL/STOCKPIL/7thrpt/fig17

**FIGURE 18**  
**Soil Screening Evaluation Process - Residual Soil**



g:/MDRC/BACKFILL/STOCKPIL/7thrpt/Fig18

29

57

Hazardous Materials  
Storage Pad

61

33

34

36

37

41

BACKFILLED AREA

BACKFILLED AREA

BACKFILLED AREA

43/44

45

40

30

20

10

1

Z

T

P

N

J

H

F

A

A.5

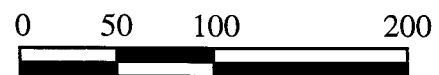
A.12

BOEING REALTY CORPORATION  
C-6 FACILITY

Soil Backfill Locations

FIGURE 19

g:\MDRC\BACKFILL\STOCKPIL7\thp\Revision\fig19



Scale  
(1 inch = 100 feet)

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## Tables

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**MONTGOMERY WATSON**

**TABLE 1****Summary of Soil Sample Analytical Methods**

<b>Sample Type</b>	<b>EPA Method</b>	<b>Analyte</b>
Hot Spot Sample	418.1 6000/7000 8260 8270 8080 8015M	TRPH (a) Metals VOCs (b) SVOCs (b) PCBs (b) Fuel Characterization (b)
Stockpile Sample	418.1 6000/7000 8260 8270 8080	TRPH (a) Metals VOCs SVOCs PCBs (b)
Confirmation Sample	418.1 6000/7000 8260 8270 8080 8015M	TRPH (a) (b) Metals VOCs (b) SVOCs (b) PCBs (b) Fuel Characterization (b)

**Notes:**

TRPH Total Recoverable Petroleum Hydrocarbons

VOCs Volatile Organic Compounds

SVOCs Semi-volatile Organic Compounds.

PCBs Polychlorinated Biphenyls

(a) Samples exhibiting TRPH concentration greater than 10,000 mg/kg were submitted for carbon chain analysis.

(b) Samples were selectively analyzed for these analytes.

**TABLE 2**  
**Analytical Data Summary**  
**Remedial Excavation WL-RE-1 Excavated Hot Spot Sample**

		Sample Number, Collection Date, Location and Depth		
		WL-GS-1-2' 6/11/97 AM-22 @ 2' bgs*		
Analyte	EPA Method			
TRPH (mg/kg)	418.1	3,000.00		
TPHd (mg/kg)	8015M	1,700.00		
TPHg (mg/kg)	8015M	280.00		
		Regulatory Levels		
		TTLC (mg/kg)	STLC (mg/L)	
Title 22 Metals (mg/kg)				
Antimony	6010	<5.00		
Arsenic	6010	<1.00		
Barium	6010	120.00		
Beryllium	6010	<0.10		
Cadmium	6010	<0.10		
Chromium (VI)	7196	<0.50		
Chromium (total)	6010	31.00		
Cobalt	6010	7.80		
Copper	6010	13.00		
Lead (total)	6010	<1.00		
Mercury	7471	<0.01		
Molybdenum	6010	<0.50		
Nickel	6010	12.00		
Selenium	6010	<1.00		
Silver	6010	<0.10		
Thallium	6010	<5.00		
Vanadium	6010	36.00		
Zinc	6010	44.00		
VOCs (1) (µg/kg)				
Total Xylenes	8260	770.00		
1,3,5-Trimethylbenzene	8260	1,500.00		
1,2,4-Trimethylbenzene	8260	1,000.00		
sec-Butylbenzene	8260	860.00		
p-Isopropyltoluene	8260	1,400.00		
SVOCs (1) (µg/kg)				
2-Methylnaphthalene	8270	220.00		
Pyrene	8270	120.00		
Carbon Chain Range (mg/kg)				
Up to and including C12	8015m	450.00		
C13-C22	8015m	1,200.00		
C23 and higher	8015m	77.00		
PCBs (µg/kg)	8080	ND		

mg/kg = milligrams per kilogram

µg/kg = micrograms per kilogram

mg/L = milligrams per liter

-- = not analyzed

bgs = below ground surface

ND = not detected

PCBs = Polychlorinated biphenyls

VOCs = Volatile Organic Compounds

SVOCs = Semi-volatile Organic Compounds

TRPH = Total Recoverable Petroleum Hydrocarbons

TPHd = Total Petroleum Hydrocarbons as diesel

TPHg = Total Petroleum Hydrocarbons as gasoline

(1) VOCs and SVOCs not listed were not detected

TTL = California Total Threshold Limit Concentration

STLC = California Soluble Threshold Limit Concentration

\* Refer to Figure 9 for sample location

\*\* STLC is 560 mg/L when TCLP is performed and result is less than 5 mg/L per CCR Title 22.

**NOTE: Site-Specific Health-Based Soil Screening Values Presented in Table 13 are Reported in mg/kg**



**TABLE 3**  
**Analytical Data Summary**  
**Remedial Excavation WL-RE-1 Stockpile Sample\***

Analyte		Sample Number and Collection Date		Regulatory Levels	
		WL-RE1-SP1 8/13/97			
EPA Method				TTL	STL
				(mg/kg)	(mg/L)
TRPH (mg/kg)		418.1	520.00		
Title 22 Metals (mg/kg)					
Antimony	6010	<5.00		500	15
Arsenic	6010	53.00 (2)(3) #		500	5
Barium	6010	100.00		10,000	100
Beryllium	6010	<0.10		75	0.75
Cadmium	6010	<0.10		100	1
Chromium (VI)	7196	<0.50		500	5
Chromium (total)	6010	25.00		2,500	5 **
Cobalt	6010	7.60		8,000	80
Copper	6010	11.00		2,500	25
Lead (total)	6010	<1.00		1,000	5
Mercury	7471	<0.01		20	0.2
Molybdenum	6010	<0.50		3,500	350
Nickel	6010	11.00		2,000	20
Selenium	6010	<1.00		100	1
Silver	6010	<0.10		500	5
Thallium	6010	<5.00		700	7
Vanadium	6010	31.00		2,400	24
Zinc	6010	40.00		5,000	250
VOCs (1) (µg/kg)					
Total Xylenes	8260	3.90			
1,3,5-Trimethylbenzene	8260	11.00			
p-Isopropyltoluene	8260	9.80			
Naphthalene	8260	5.60			
SVOCs (µg/kg)		8270	ND		
Carbon Chain Range (mg/kg)		8015m	--		
PCBs (µg/kg)		8080	--		

mg/kg = milligrams per kilogram  
µg/kg = micrograms per kilogram  
mg/L = milligrams per liter  
-- = not analyzed  
bgs = below ground surface  
ND = not detected  
PCBs = Polychlorinated biphenyls  
# = Exceeds Screening Value

VOCs = Volatile Organic Compounds  
SVOCs = Semi-volatile Organic Compounds  
TRPH = Total Recoverable Petroleum Hydrocarbons  
TTL = California Total Threshold Limit Concentration  
STL = California Soluble Threshold Limit Concentration  
(1) VOCs not listed were not detected  
(2) Waste Extraction Test performed on this sample. Result was 1.6 mg/L.  
(3) TCLP analysis performed on this sample. Result was <1.0 mg/L.

\* Refer to Figure 4 for sample location

\*\* STL is 560 mg/L when TCLP is performed and result is less than 5 mg/L per CCR Title 22.

**NOTE: Site-Specific Health-Based Soil Screening Values Presented in Table 13 are Reported in mg/kg**

**TABLE 4**  
**Analytical Data Summary**  
**Remedial Excavation B44-RE-1 Excavated Hot Spot Sample**

		Sample Number, Collection Date, Grid Location and Depth		
		B44-GS-5-2'		
		8/19/97		
		A.9-7.5' @ 2' bgs*		
Analyte	EPA Method			
TRPH (mg/kg)	418.1	<8.00		
TPHd (mg/kg)	8015M	12.00		
TPHg (mg/kg)	8015M	<5.00		
		Regulatory Levels		
		TTLc (mg/kg)	STLC (mg/L)	
Title 22 Metals (mg/kg)				
Antimony	6010	<5.00	500	15
Arsenic	6010	<1.00	500	5
Barium	6010	120.00	10,000	100
Beryllium	6010	<0.10	75	0.75
Cadmium	6010	<0.10	100	1
Chromium (VI)	7196	<0.50	500	5
Chromium (total)	6010	29.00	2,500	5 **
Cobalt	6010	8.30	8,000	80
Copper	6010	16.00	2,500	25
Lead (total)	6010	<1.00	1,000	5
Mercury	7471	<0.01	20	0.2
Molybdenum	6010	<0.50	3,500	350
Nickel	6010	12.00	2,000	20
Selenium	6010	<1.00	100	1
Silver	6010	<0.10	500	5
Thallium	6010	<5.00	700	7
Vanadium	6010	32.00	2,400	24
Zinc	6010	47.00	5,000	250
VOCs (µg/kg)	8260	ND		
SVOCs (µg/kg)	8270	ND		
Carbon Chain Range (mg/kg)				
Up to and including C12	8015m	0.70		
C13-C22	8015m	5.80		
C23 and higher	8015m	5.80		
PCBs (µg/kg)	8080	ND		

mg/kg = milligrams per kilogram

µg/kg = micrograms per kilogram

mg/L = milligrams per liter

-- = not analyzed

bgs = below ground surface

ND = not detected

PCBs = Polychlorinated biphenyls

VOCs = Volatile Organic Compounds

SVOCs = Semi-volatile Organic Compounds

TRPH = Total Recoverable Petroleum Hydrocarbons

TPHd = Total Petroleum Hydrocarbons as diesel

TPHg = Total Petroleum Hydrocarbons as gasoline

TTLc = California Total Threshold Limit Concentration

STLC = California Soluble Threshold Limit Concentration

\* Refer to Figure 10 for sample location

\*\* STLC is 560 mg/L when TCLP is performed and result is less than 5 mg/L per CCR Title 22.

**NOTE: Site-Specific Health-Based Soil Screening Values Presented in Table 13 are Reported in mg/kg**

**TABLE 5**  
**Analytical Data Summary**  
**Remedial Excavation B44-RE-1 Stockpile Samples\***

		Sample Number and Collection Date					
		B44-RE1-SP1 9/3/97	B44-RE1-SP2 10/13/97	B44-RE1-SP2A 10/23/97	B44-RE1-SP3 10/22/97		
Analyte	EPA Method						
TRPH (mg/kg)	418.1	22.00	40.00	--	9.20	Regulatory Levels	
						TTLc (mg/kg)	STLC (mg/L)
Title 22 Metals (mg/kg)							
Antimony	6010	<5.00	<5.00	--	<5.00	500	15
Arsenic	6010	<1.00	<1.00	--	10.00	500	5
Barium	6010	96.00	110.00	--	100.00	10,000	100
Beryllium	6010	<0.10	<0.10	--	<0.10	75	0.75
Cadmium	6010	<0.10	<0.10	--	<0.10	100	1
Chromium (VI)	7196	<0.50	<0.50	--	<0.50	500	5
Chromium (total)	6010	11.00	29.00	--	29.00	2,500	5 **
Cobalt	6010	7.30	6.50	--	7.70	8,000	80
Copper	6010	13.00	12.00	--	14.00	2,500	25
Lead (total)	6010	5.30	<1.00	--	<1.00	1,000	5
Mercury	7471	<0.01	<0.01	--	<0.01	20	0.2
Molybdenum	6010	<0.50	<0.50	--	<0.50	3,500	350
Nickel	6010	6.50	8.50	--	9.40	2,000	20
Selenium	6010	<1.00	<1.00	--	<1.00	100	1
Silver	6010	<0.10	<0.10	--	<0.10	500	5
Thallium	6010	<5.00	<5.00	--	<5.00	700	7
Vanadium	6010	21.00	32.00	--	36.00	2,400	24
Zinc	6010	39.00	46.00	--	64.00	5,000	250
VOCs (µg/kg)	8260	ND	ND	--	ND		
SVOCs (µg/kg)	8270	ND	ND	--	ND		
Carbon Chain Range (mg/kg)	8015m	--	--	--	--		
PCBs (µg/kg)	8080	--	--	ND	--		

mg/kg = milligrams per kilogram  
µg/kg = micrograms per kilogram  
mg/L = milligrams per liter  
-- = not analyzed

VOCs = Volatile Organic Compounds  
PCBs = Polychlorinated biphenyls  
ND = not detected

SVOCs = Semi-volatile Organic Compounds  
TRPH = Total Recoverable Petroleum Hydrocarbons  
TTLc = California Total Threshold Limit Concentration  
STLC = California Soluble Threshold Limit Concentration

\* Refer to Figure 6 for sample locations

\*\* STLC is 560 mg/L when TCLP is performed and result is less than 5 mg/L per CCR Title 22.

**NOTE: Site-Specific Health-Based Soil Screening Values Presented in Table 13 are Reported in mg/kg**

**TABLE 6**  
**Analytical Data Summary**  
**Remedial Excavation B37-RE-6 Excavated Kennedy-Jenks Sample**

Analyte		Sample Number, Collection Date, Grid Location and Depth		Regulatory Levels	
		3J-2-10			
		3/25/96			
EPA Method		K/L-29.5 @ 10' bgs*			
TRPH (mg/kg)	418.1	23.00		TTLc	
				(mg/kg)	STLC
Title 22 Metals (mg/kg)				(mg/L)	
Antimony	6010	<1.00		500	15
Arsenic	6010	<10.00		500	5
Barium	6010	170.00		10,000	100
Beryllium	6010	0.80		75	0.75
Cadmium	6010	<0.20		100	1
Chromium (VI)	7196	<0.10		500	5
Chromium (total)	6010	35.90		2,500	5 **
Cobalt	6010	18.80		8,000	80
Copper	6010	30.60		2,500	25
Lead (total)	6010	7.80		1,000	5
Mercury	7471	0.06		20	0.2
Molybdenum	6010	<4.00		3,500	350
Nickel	6010	26.90		2,000	20
Selenium	6010	<0.50		100	1
Silver	6010	<0.50		500	5
Thallium	6010	<200.00		700	7
Vanadium	6010	68.30		2,400	24
Zinc	6010	75.70		5,000	250
Halogenated VOCs (µg/kg)		8010	ND		
PCBs (1) (µg/kg)					
PCB-1248	8080	9,800.00			

mg/kg = milligrams per kilogram

µg/kg = micrograms per kilogram

mg/L = milligrams per liter

-- = not analyzed

VOCs = Volatile Organic Compounds

PCBs = Polychlorinated biphenyls

ND = not detected

bgs = below ground surface

TTLC = California Total Threshold Limit Concentration

STLC = California Soluble Threshold Limit Concentration

(1) PCBs not listed were not detected

TRPH = Total Recoverable Petroleum Hydrocarbons

\* Collected by Kennedy-Jenks; refer to Figure 11 for sample location

\*\* STLC is 560 mg/L when TCLP is performed and result is less than 5 mg/L per CCR Title 22.

**NOTE: Site-Specific Health-Based Soil Screening Values Presented in Table 13 are Reported in mg/kg**

**TABLE 7**  
**Analytical Data Summary**  
**Remedial Excavation B37-RE-6 Stockpile Sample\***

Analyte	EPA Method	Sample Number and Collection Date		
		B37-RE6-SP1 10/14/97		
TRPH (mg/kg)	418.1	75.00	Regulatory Levels	
			TTLc (mg/kg)	STLC (mg/L)
<b>Title 22 Metals (mg/kg)</b>				
Antimony	6010	<5.00	500	15
Arsenic	6010	13.00	500	5
Barium	6010	110.00	10,000	100
Beryllium	6010	<0.10	75	0.75
Cadmium	6010	<0.10	100	1
Chromium (VI)	7196	<0.50	500	5
Chromium (total)	6010	29.00	2,500	5 **
Cobalt	6010	8.40	8,000	80
Copper	6010	17.00	2,500	25
Lead (total)	6010	<1.00	1,000	5
Mercury	7471	<0.01	20	0.2
Molybdenum	6010	<0.50	3,500	350
Nickel	6010	14.00	2,000	20
Selenium	6010	<1.00	100	1
Silver	6010	<0.10	500	5
Thallium	6010	<5.00	700	7
Vanadium	6010	34.00	2,400	24
Zinc	6010	44.00	5,000	250
VOCs (µg/kg)	8260	ND		
SVOCs (µg/kg)	8270	ND		
Carbon Chain Range (mg/kg)	8015m	--		
PCBs (1) (µg/kg)				
PCB-1248	8080	100.00		

mg/kg = milligrams per kilogram

µg/kg = micrograms per kilogram

mg/L = milligrams per liter

-- = not analyzed

VOCs = Volatile Organic Compounds

SVOCs = Semi-volatile Organic Compounds

TRPH = Total Recoverable Petroleum Hydrocarbons

PCBs = Polychlorinated biphenyls

ND = not detected

TTLc = California Total Threshold Limit Concentration

STLC = California Soluble Threshold Limit Concentration

(1) PCBs not listed were not detected

\* Refer to Figure 7 for sample location

\*\* STLC is 560 mg/L when TCLP is performed and result is less than 5 mg/L per CCR Title 22.

**NOTE: Site-Specific Health-Based Soil Screening Values Presented in Table 13 are Reported in mg/kg**

**TABLE 8**  
**Analytical Data Summary**  
**Remedial Excavation B37-RE-7 Excavated Hot Spot Samples**

		Sample Number, Collection Date, Grid Location and Depth			
		B37-GS-206-5' 10/28/97 C/D-26.5 @ 5' bgs*	B37-GS-207-5' 10/28/97 C/D-27.5 @ 5' bgs*		
Analyte	EPA Method				
TRPH (mg/kg)	418.1	15,000.00	20,000.00	Regulatory Levels	
				TTLc (mg/kg)	STLC (mg/L)
Title 22 Metals (mg/kg)					
Antimony	6010	<5.00	<5.00	500	15
Arsenic	6010	<1.00	<1.00	500	5
Barium	6010	150.00	100.00	10,000	100
Beryllium	6010	<0.10	<0.10	75	0.75
Cadmium	6010	<0.10	<0.10	100	1
Chromium (VI)	7196	<0.50	<0.50	500	5
Chromium (total)	6010	29.00	29.00	2,500	5 **
Cobalt	6010	15.00	7.00	8,000	80
Copper	6010	12.00	13.00	2,500	25
Lead (total)	6010	<1.00	<1.00	1,000	5
Mercury	7471	<0.01	<0.01	20	0.2
Molybdenum	6010	<0.50	<0.50	3,500	350
Nickel	6010	13.00	9.70	2,000	20
Selenium	6010	<1.00	<1.00	100	1
Silver	6010	<0.10	<0.10	500	5
Thallium	6010	<5.00	<5.00	700	7
Vanadium	6010	30.00	30.00	2,400	24
Zinc	6010	40.00	50.00	5,000	250
VOCs (µg/kg)	8260	ND	--		
SVOCs (µg/kg)	8270	ND	--		
Carbon Chain Range (mg/kg)					
Up to and including C12	8015m	<0.10	11.00		
C13-C22	8015m	130.00	1,500.00		
C23 and higher	8015m	140.00	4,100.00		
PCBs (µg/kg)	8080	--	--		

mg/kg = milligrams per kilogram  
µg/kg = micrograms per kilogram  
mg/L = milligrams per liter  
-- = not analyzed  
bgs = below ground surface  
ND = not detected  
PCBs = Polychlorinated biphenyls

VOCs = Volatile Organic Compounds  
SVOCs = Semi-volatile Organic Compounds  
TRPH = Total Recoverable Petroleum Hydrocarbons  
TTLc = California Total Threshold Limit Concentration  
STLC = California Soluble Threshold Limit Concentration

\* Refer to Figure 12 for sample locations

\*\* STLC is 560 mg/L when TCLP is performed and result is less than 5 mg/L per CCR Title 22.

**NOTE: Site-Specific Health-Based Soil Screening Values Presented in Table 13 are Reported in mg/kg**

**TABLE 9**  
**Analytical Data Summary**  
**Remedial Excavation WL-RE-1 Confirmation Samples**

Analyte	EPA Method	Sample Number, Collection Date, Grid Location and Depth					Regulatory Levels	
		WL-GS-13-5' 11/11/97 AM-21 @ 5' bgs*	WL-GS-14-4' 11/11/97 AL/AM-22 @ 4' bgs*	WL-GS-15-5' 11/11/97 AM-23 @ 5' bgs*	WL-GS-16-5' 11/11/97 AM/AN-22 @ 5' bgs*	WL-GS-17-6' 11/11/97 AM-22 @ 6' bgs*		
TRPH (mg/kg)	418.1	250.00	<8.00	<8.00	66.00	<8.00		
TPHd (mg/kg)	8015M	<8.00	<8.00	<8.00	<8.00	<8.00		
TPHg (mg/kg)	8015M	<5.00	<5.00	<5.00	<5.00	<5.00		
<b>Title 22 Metals (mg/kg)</b>							<b>TTLc</b>	<b>STLc</b>
Antimony	6010	<5.00	<5.00	<5.00	<5.00	<5.00	500	15
Arsenic	6010	5.30	1.20	1.60	4.10	1.40	500	5
Barium	6010	87.00	100.00	110.00	90.00	95.00	10,000	100
Beryllium	6010	<0.10	<0.10	<0.10	<0.10	<0.10	75	0.75
Cadmium	6010	0.81	<0.10	<0.10	0.52	<0.10	100	1
Chromium (VI)	7196	<0.50	<0.50	<0.50	<0.50	<0.50	500	5
Chromium (total)	6010	22.00	16.00	18.00	22.00	15.00	2,500	5 **
Cobalt	6010	7.40	7.10	7.40	7.60	8.50	8,000	80
Copper	6010	26.00	15.00	16.00	29.00	15.00	2,500	25
Lead (total)	6010	10.00	2.40	2.60	15.00	2.30	1,000	5
Mercury	7471	<0.01	<0.01	<0.01	<0.01	<0.01	20	0.2
Molybdenum	6010	<0.50	<0.50	<0.50	<0.50	<0.50	3,500	350
Nickel	6010	12.00	12.00	12.00	12.00	10.00	2,000	20
Selenium	6010	<1.00	<1.00	<1.00	<1.00	<1.00	100	1
Silver	6010	<0.10	<0.10	<0.10	<0.10	<0.10	500	5
Thallium	6010	<5.00	<5.00	<5.00	<5.00	<5.00	700	7
Vanadium	6010	29.00	31.00	34.00	29.00	32.00	2,400	24
Zinc	6010	48.00	31.00	33.00	52.00	30.00	5,000	250
VOCs (µg/kg)	8260	ND	ND	ND	ND	ND		
<b>SVOCs (1) (µg/kg)</b>								
Acenaphthene	8270	310.00	<100.00	<100.00	<100.00	<100.00		
Anthracene	8270	540.00	<100.00	<100.00	<100.00	<100.00		
Benzo (a) Anthracene	8270	460.00	<100.00	<100.00	<100.00	<100.00		
Benzo (b) Fluoranthene	8270	280.00	<250.00	<250.00	<250.00	<250.00		
Benzo (k) Fluoranthene	8270	370.00	<250.00	<250.00	<250.00	<250.00		
Benzo (a) Pyrene	8270	420.00	<250.00	<250.00	<250.00	<250.00		
Chrysene	8270	480.00	<100.00	<100.00	110.00	<100.00		
Dibenzofuran	8270	470.00	<100.00	<100.00	<100.00	<100.00		
Fluoranthene	8270	1,400.00	<100.00	<100.00	110.00	<100.00		
Fluorene	8270	600.00	<100.00	<100.00	<100.00	<100.00		
Indeno(1,2,3-cd)Pyrene	8270	250.00	<250.00	<250.00	<250.00	<250.00		
2-Methylnaphthalene	8270	620.00	<100.00	<100.00	<100.00	<100.00		
Naphthalene	8270	3,500.00	<100.00	<100.00	<100.00	<100.00		
Phenanthrene	8270	2,100.00	<100.00	<100.00	<100.00	<100.00		
Pyrene	8270	1,100.00	<100.00	<100.00	110.00	<100.00		
<b>Carbon Chain Range (mg/kg)</b>								
Up to and including C12	8015m	0.93	<0.10	<0.10	<0.10	<0.10		
C13-C22	8015m	22.00	<0.10	<0.10	32.00	<0.10		
C23 and higher	8015m	78.00	<0.10	<0.10	72.00	<0.10		
<b>PCBs (1) (µg/kg)</b>								
PCB-1260	8080	50.00	<20.00	<20.00	<20.00	<20.00		

mg/kg = milligrams per kilogram  
µg/kg = micrograms per kilogram  
mg/L = milligrams per liter  
-- = not analyzed  
bgs = below ground surface  
ND = not detected  
PCBs = Polychlorinated biphenyls  
VOCs = Volatile Organic Compounds

SVOCs = Semi-volatile Organic Compounds  
TRPH = Total Recoverable Petroleum Hydrocarbons  
TPHd = Total Petroleum Hydrocarbons as diesel  
TPHg = Total Petroleum Hydrocarbons as gasoline  
(1) SVOCs, and PCBs not listed were not detected  
TTLc = California Total Threshold Limit Concentration  
STLc = California Soluble Threshold Limit Concentration

\* Refer to Figure 13 for sample locations

\*\* STLc is 560 mg/L when TCLP is performed and result is less than 5 mg/L per CCR Title 22.

**NOTE: Site-Specific Health-Based Soil Screening Values Presented in Table 13 are Reported in mg/kg**

**TABLE 10**  
**Analytical Data Summary**  
**Remedial Excavation B44-RE-1 Confirmation Samples**

		Sample Number, Collection Date, Grid Location and Depth			
		B44-GS-6-8' 9/3/97 Center of North Tank Pad @ 8' bgs*		B44-GS-7-8' 10/13/97 A.9-12.5 @ 8' bgs*	
Analyte	EPA Method				
TRPH (mg/kg)	418.1	12.00	<8.00	Regulatory Levels	
				TTL	STL
Title 22 Metals (mg/kg)				(mg/kg)	(mg/L)
Antimony	6010	<5.00	<5.00	500	15
Arsenic	6010	<1.00	<1.00	500	5
Barium	6010	75.00	67.00	10,000	100
Beryllium	6010	<0.10	<0.10	75	0.75
Cadmium	6010	<0.10	<0.10	100	1
Chromium (VI)	7196	<0.50	<0.50	500	5
Chromium (total)	6010	13.00	24.00	2,500	5 **
Cobalt	6010	10.00	5.40	8,000	80
Copper	6010	13.00	9.10	2,500	25
Lead (total)	6010	2.80	<1.00	1,000	5
Mercury	7471	<0.01	<0.01	20	0.2
Molybdenum	6010	<0.50	<0.50	3,500	350
Nickel	6010	8.60	8.00	2,000	20
Selenium	6010	<1.00	<1.00	100	1
Silver	6010	<0.10	<0.10	500	5
Thallium	6010	<5.00	<5.00	700	7
Vanadium	6010	29.00	26.00	2,400	24
Zinc	6010	36.00	48.00	5,000	250
VOCs (l) (ug/kg)					
1,1-Dichloroethene	8260	<2.50	3.30		
Trichloroethene	8260	<2.50	10.00		
SVOCs (ug/kg)	8270	ND	ND		
Carbon Chain Range (mg/kg)	8015m	--	--		
PCBs (ug/kg)	8080	--	ND		

mg/kg = milligrams per kilogram  
µg/kg = micrograms per kilogram  
mg/L = milligrams per liter  
VOCs = Volatile Organic Compounds

SVOCs = Semi-volatile Organic Compounds  
PCBs = polychlorinated biphenyls  
bgs = below ground surface  
-- = not analyzed

ND = none detected  
TRPH = Total Recoverable Petroleum Hydrocarbons  
TTL = California Total Threshold Limit Concentration  
STLC = California Soluble Threshold Limit Concentration  
(1) VOCs not listed were not detected

\* Refer to Figure 14 for sample locations

\*\* STLC is 560 mg/L when TCLP is performed and result is less than 5 mg/L per CCR Title 22.

**NOTE: Site-Specific Health-Based Soil Screening Values Presented in Table 13 are Reported in mg/kg**



**TABLE 11**  
**Analytical Data Summary**  
**Remedial Excavation B37-RE-6 Confirmation Samples**

		Sample Number, Collection Date, Grid Location and Depth						
		B37-GS-183A-10' 5/7/97 K-29 @ 10' bgs*	B37-GS-183B-10' 5/7/97 L-30 @ 10' bgs	B37-GS-183C-10' 5/7/97 K/L-30 @ 10' bgs*	B37-GS-183D-10' 5/7/97 K/L-29 @ 10' bgs*	B37-GS-203-12' 10/14/97 K/L-29.5 @ 12' bgs*		
Analyte	EPA Method							
TRPH (mg/kg)	418.1	--	--	20.00	--	--	Regulatory Levels	
							TTL	STL
Title 22 Metals (mg/kg)							(mg/kg)	(mg/L)
Antimony	6010	--	--	<5.00	--	--	500	15
Arsenic	6010	--	--	<1.00	--	--	500	5
Barium	6010	--	--	140.00	--	--	10,000	100
Beryllium	6010	--	--	<0.10	--	--	75	0.75
Cadmium	6010	--	--	<0.10	--	--	100	1
Chromium (VI)	7196	--	--	<0.50	--	--	500	5
Chromium (total)	6010	--	--	27.00	--	--	2,500	5 **
Cobalt	6010	--	--	10.00	--	--	8,000	80
Copper	6010	--	--	17.00	--	--	2,500	25
Lead (total)	6010	--	--	<1.00	--	--	1,000	5
Mercury	7471	--	--	<0.01	--	--	20	0.2
Molybdenum	6010	--	--	<0.50	--	--	3,500	350
Nickel	6010	--	--	15.00	--	--	2,000	20
Selenium	6010	--	--	<1.00	--	--	100	1
Silver	6010	--	--	<0.10	--	--	500	5
Thallium	6010	--	--	<5.00	--	--	700	7
Vanadium	6010	--	--	36.00	--	--	2,400	24
Zinc	6010	--	--	54.00	--	--	5,000	250
VOCs (µg/kg)	8260	--	--	ND	--	--		
SVOCs (µg/kg)	8270	--	--	ND	--	--		
Carbon Chain Range (mg/kg)	8015m	--	--	--	--	--		
PCBs (µg/kg)	8080	ND	ND	ND	ND	ND		

mg/kg = milligrams per kilogram  
µg/kg = micrograms per kilogram  
mg/L = milligrams per liter  
VOCs = Volatile Organic Compounds

SVOCs = Semi-volatile Organic Compounds  
TRPH = Total Recoverable Petroleum Hydrocarbons  
-- = not analyzed  
bgs = below ground surface

ND = none detected  
PCBs = polychlorinated biphenyls  
TTL = California Total Threshold Limit Concentration  
STL = California Soluble Threshold Limit Concentration

\* Refer to Figure 15 for sample locations

\*\* STL is 560 mg/L when TCLP is performed and result is less than 5 mg/L per CCR Title 22.

**NOTE: Site-Specific Health-Based Soil Screening Values Presented in Table 12 are Reported in mg/kg**

**TABLE 12**  
**Analytical Data Summary**  
**Remedial Excavation B37-RE-7 Confirmation Samples**

Analyte	EPA Method	Sample Number, Collection Date, Grid Location and Depth							Regulatory Levels	
		B37-GS-208-8' 10/29/97 C-26.5 @ 8' bgs*	B37-GS-209-10' 10/29/97 C/D-26.5 @ 10' bgs*	B37-GS-210-7' 10/29/97 D-26.5 @ 7' bgs*	B37-GS-211-8' 10/29/97 C-28 @ 8' bgs*	B37-GS-212-10' 10/29/97 C/D-28 @ 10' bgs*	B37-GS-213-8' 10/29/97 D-28 @ 8' bgs*	B37-GS-214-6' 10/30/97 D-31.5 @ 6' bgs*		
TRPH (mg/kg)	418.1	<8.00	380.00	<8.00	<8.00	35.00	<8.00	50,000.00	TTLc (mg/kg)	STLC (mg/L)
<b>Title 22 Metals (mg/kg)</b>										
Antimony	6010	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	500	15
Arsenic	6010	10.00	13.00	9.40	9.40	9.60	7.90	10.00	500	5
Barium	6010	81.00	97.00	120.00	140.00	110.00	64.00	110.00	10,000	100
Beryllium	6010	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	75	0.75
Cadmium	6010	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	100	1
Chromium (VI)	7196	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	500	5
Chromium (total)	6010	32.00	27.00	36.00	38.00	30.00	23.00	32.00	2,500	5 **
Cobalt	6010	8.20	7.30	14.00	4.90	9.20	6.60	7.60	8,000	80
Copper	6010	11.00	15.00	15.00	15.00	13.00	8.50	11.00	2,500	25
Lead (total)	6010	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	1,000	5
Mercury	7471	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	20	0.2
Molybdenum	6010	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	3,500	350
Nickel	6010	14.00	12.00	14.00	11.00	13.00	11.00	13.00	2,000	20
Selenium	6010	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	100	1
Silver	6010	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	500	5
Thallium	6010	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	700	7
Vanadium	6010	38.00	29.00	41.00	35.00	30.00	23.00	33.00	2,400	24
Zinc	6010	55.00	48.00	64.00	53.00	50.00	38.00	41.00	5,000	250
<b>VOCs (1)(µg/kg)</b>										
Trichloroethene	8260	--	<2.50	--	--	--	--	43.00		
Tetrachloroethene	8260	--	<2.50	--	--	--	--	3.20		
<b>SVOCs (µg/kg)</b>										
	8270	--	ND	--	--	--	--	ND		
<b>Carbon Chain Range (mg/kg)</b>										
Up to and including C12	8015m	--	--	--	--	--	--	<0.10		
C13-C22	8015m	--	--	--	--	--	--	2,500.00		
C23 and higher	8015m	--	--	--	--	--	--	17,000.00		
<b>PCBs (µg/kg)</b>										
	8080	--	ND	--	--	--	--	ND		

mg/kg = milligrams per kilogram  
µg/kg = micrograms per kilogram  
mg/L = milligrams per liter  
-- = not analyzed  
bgs = below ground surface  
ND = not detected

PCBs = Polychlorinated biphenyls  
VOCs = Volatile Organic Compounds  
SVOCs = Semi-volatile Organic Compounds  
TRPH = Total Recoverable Petroleum Hydrocarbons  
TTLc = California Total Threshold Limit Concentration  
STLC = California Soluble Threshold Limit Concentration  
(1) VOCs not listed were not detected

\* Refer to Figure 16 for sample locations

\*\* STLC is 560 mg/L when TCLP is performed and result is less than 5 mg/L per CCR Title 22.

**NOTE: Site-Specific Health-Based Soil Screening Values Presented in Table 13 are Reported in mg/kg**

**TABLE 13**  
**Site-Specific Health-Based Soil Screening Values for**  
**Organic Constituents Soil Exposure Pathways (mg/kg)**  
**Page 1 of 5**

Constituent	Construction Worker Initial Value	Commercial/ Industrial User Initial Value	Final Value
1-butanol	1.98E+04	3.46E+04	1.98E+04
1,1-dichloroethane	2.23E+03	1.10E+03	1.10E+03
1,1-dichloroethene	1.57E+01	4.21E+00	4.21E+00
1,1,1,2-tetrachloroethane	4.98E+02	1.44E+04	4.98E+02
1,1,2-trichloroethane	2.23E+02	1.26E+03	2.23E+02
1,1,2,2-tetrachloroethane	6.25E+01	1.50E+03	6.25E+01
1,2-dibromo-3-chloropropane	2.42E+00	7.47E+01	2.42E+00
1,2-dibromoethane	4.86E+00	1.84E+02	4.86E+00
1,2-dichlorobenzene	NA	2.64E+06	2.64E+06
1,2-dichloroethane	2.06E+02	2.66E+02	2.06E+02
1,2-dichloropropane	3.37E+01	7.25E+00	7.25E+00
1,2-diphenylhydrazine	2.03E+01	2.36E+08	2.03E+01
1,2,3-trichloropropane	2.39E+00	4.08E+01	2.39E+00
1,2,4-trichlorobenzene	1.74E+02	4.74E+07	1.74E+02
1,3-dichloropropene	4.83E+01	6.63E+02	4.83E+01
1,4-dichlorobenzene	4.32E+02	4.37E+04	4.32E+02
2-butanone	3.28E+04	2.35E+06	3.28E+04
2-chlorophenol	8.57E+02	1.17E+06	8.57E+02
2-methylphenol	8.66E+03	7.59E+07	8.66E+03
2-naphthylamine	9.81E+00	1.63E+06	9.81E+00
2,4-dichlorophenol	5.21E+01	2.22E+07	5.21E+01
2,4-dimethylphenol	3.48E+03	4.37E+08	3.48E+03
2,4-dinitrophenol	3.49E+01	7.14E+09	3.49E+01
2,4-dinitrotoluene	3.48E+01	7.62E+06	3.48E+01
2,4,5-trichlorophenol	1.73E+04	2.21E+08	1.73E+04
2,4,6-trichlorophenol	2.52E+02	1.10E+07	2.52E+02
2,6-dinitrotoluene	2.59E+01	4.51E+05	2.59E+01
3,3-dichlorobenzidine	1.47E+01	7.53E+08	1.47E+01
4-chloroaniline	6.93E+01	6.50E+06	6.93E+01
4-methyl-2-pentanone	1.20E+04	6.84E+05	1.20E+04
4-methylphenol	8.69E+01	4.01E+07	8.69E+01
4,4-ddd	1.03E+02	9.97E+08	1.03E+02
4,4-dde	7.28E+01	2.83E+06	7.28E+01
4,4-ddt	1.22E+01	2.26E+08	1.22E+01
acenaphthene	8.10E+03	1.62E+08	8.10E+03
acetone	1.55E+04	4.37E+05	1.55E+04
acrolein	NA	8.05E+01	8.05E+01
acrylonitrile	1.59E+01	7.65E+01	1.59E+01

**TABLE 13**  
**Site-Specific Health-Based Soil Screening Values for**  
**Organic Constituents Soil Exposure Pathways (mg/kg)**  
**Page 2 of 5**

Constituent	Construction Worker Initial Value	Commercial/ Industrial User Initial Value	Final Value
aldrin	7.32E-01	2.82E+04	7.32E-01
alpha-bhc	3.93E+00	2.32E+05	3.93E+00
aniline	3.10E+03	1.02E+07	3.10E+03
anthracene	4.06E+03	1.37E+10	4.06E+03
aroclor 1016	NA	7.35E+05	7.35E+05
aroclor 1254	8.70E-01	5.69E+05	8.70E-01
benzene	1.43E+02	1.71E+02	1.43E+02
benzidine	3.52E-02	1.55E+02	3.52E-02
benzoic acid	6.96E+04	6.58E+10	6.96E+04
benzo(a)anthracene	1.14E+01	1.13E+09	1.14E+01
benzo(a)pyrene	1.14E+00	9.56E+07	1.14E+00
benzo(b)fluoranthene	1.14E+01	3.19E+08	1.14E+01
benzo(k)fluoranthene	1.14E+01	9.56E+07	1.14E+01
benzyl alcohol	1.73E+04	3.81E+08	1.73E+04
benzyl chloride	1.00E+02	4.03E+03	1.00E+02
beta-bhc	1.38E+01	9.94E+06	1.38E+01
beta-chloronaphthalene	NA	2.32E+07	2.32E+07
bis(2-chloro-1-methylethyl)ether	2.49E+02	2.93E+04	2.49E+02
bis(2-chloroethyl)ether	6.91E+00	6.91E+02	6.91E+00
bis(2-ethylhexyl)phthalate	2.10E+03	3.59E+09	2.10E+03
bromodichloromethane	1.30E+02	2.94E+03	1.30E+02
bromoform	3.34E+02	1.28E+05	3.34E+02
bromomethane	NA	1.15E+02	1.15E+02
carbazole	8.83E+02	6.66E+08	8.83E+02
carbon disulfide	1.43E+03	7.04E+04	1.43E+03
carbon tetrachloride	9.71E+01	1.35E+02	9.71E+01
chlordane	1.04E+00	1.55E+05	1.04E+00
chlorobenzene	NA	2.83E+04	2.83E+04
chloroform	1.49E+02	9.58E+02	1.49E+02
chloromethane	7.43E+02	7.40E+01	7.40E+01
chrysene	1.14E+02	5.06E+10	1.14E+02
cis-1,2-dichloroethene	1.34E+03	7.51E+03	1.34E+03
cumene	3.79E+03	5.73E+04	3.79E+03
dibenzo(a,h)anthracene	3.35E+00	6.34E+11	3.35E+00
dibromochloromethane	1.50E+02	1.54E+02	1.50E+02
dichlorodifluoromethane	2.14E+03	7.01E+02	7.01E+02
dieldrin	1.22E+00	2.33E+04	1.22E+00
diethyl phthalate	1.39E+05	6.03E+09	1.39E+05
di-n-butylphthalate	1.74E+04	4.19E+08	1.74E+04

**TABLE 13**  
**Site-Specific Health-Based Soil Screening Values for**  
**Organic Constituents Soil Exposure Pathways (mg/kg)**  
**Page 3 of 5**

Constituent	Construction Worker Initial Value	Commercial/ Industrial User Initial Value	Final Value
di-n-octylphthalate	3.49E+02	1.80E+10	3.49E+02
endosulfan	1.46E+02	2.14E+08	1.46E+02
endrin	7.33E+00	1.37E+08	7.33E+00
ethyl chloride	1.42E+05	1.57E+06	1.42E+05
ethylbenzene	NA	7.33E+05	7.33E+05
fluoranthene	6.97E+03	3.03E+10	6.97E+03
fluorene	6.94E+03	1.40E+08	6.94E+03
gamma-bhc	2.32E+01	2.63E+05	2.32E+01
heptachlor	2.87E+00	1.78E+03	2.87E+00
heptachlor epoxide	3.14E-01	1.35E+03	3.14E-01
hexachlorobenzene	9.69E+00	2.80E+03	9.69E+00
hexachlorobutadiene	2.24E+02	7.13E+04	2.24E+02
hexachlorocyclopentadiene	8.87E+01	9.79E+02	8.87E+01
hexachloroethane	1.73E+02	2.39E+05	1.73E+02
indeno(1,2,3-cd)pyrene	1.47E+01	1.23E+11	1.47E+01
isobutyl alcohol	4.81E+04	2.55E+06	4.81E+04
isophorone	1.85E+04	2.92E+07	1.85E+04
methoxychlor	8.71E+01	1.48E+09	8.71E+01
methyl methacrylate	1.06E+03	5.56E+04	1.06E+03
methylene bromide	1.51E+03	2.75E+04	1.51E+03
methylene chloride	1.07E+03	1.26E+03	1.07E+03
methyl-tert-butyl ether	NA	1.39E+06	1.39E+06
n-butylbenzyl phthalate	3.48E+03	6.52E+09	3.48E+03
nitroaniline, o-	8.07E+03	2.45E+06	8.07E+03
nitrobenzene	8.61E+01	1.78E+05	8.61E+01
nitrosodiphenylamine, p-	8.02E+02	1.03E+07	8.02E+02
n-nitrosodimethylamine	2.60E-01	1.38E-02	1.38E-02
n-nitroso-di-n-propylamine	2.48E+00	4.46E+02	2.48E+00
n-nitrosodiphenylamine	1.96E+03	4.80E+09	1.96E+03
o-chlorotoluene	3.14E+03	1.05E+05	3.14E+03
p-chloro-m-cresol	3.48E+04	NA	3.48E+04
pentachlorophenol	3.04E+02	3.09E+07	3.04E+02
phenol	1.04E+04	3.14E+09	1.04E+04
pyrene	2.35E+03	4.11E+10	2.35E+03
styrene	3.02E+05	7.58E+06	3.02E+05
tetrachloroethene	3.36E+02	7.52E+03	3.36E+02
toluene	3.12E+04	2.41E+05	3.12E+04
toxaphene	1.47E+01	9.16E+04	1.47E+01
trans-1,2-dichloroethene	2.68E+03	1.47E+04	2.68E+03

**TABLE 13**  
**Site-Specific Health-Based Soil Screening Values for**  
**Organic Constituents Soil Exposure Pathways (mg/kg)**  
**Page 4 of 5**

Constituent	Construction Worker Initial Value	Commercial/ Industrial User Initial Value	Final Value
trichloroethene	1.05E+03	1.39E+03	1.05E+03
trichlorofluoromethane	1.03E+04	4.89E+04	1.03E+04
vinyl acetate	5.41E+03	2.31E+05	5.41E+03
vinyl chloride	5.16E+00	1.81E-01	1.81E-01
xylenes	3.26E+04	2.61E+07	3.26E+04

**TABLE 13**  
**Site-Specific Health-Based Soil Screening Values for**  
**Inorganic Constituents Soil Exposure Pathways (mg/kg)**  
**Page 5 of 5**

Compound	Initial Value	ILM Background*	Final Value
aluminum	NT	3.63E+04	3.63E+04
antimony	9.05E+00	5.00E+00	9.05E+00
arsenic	8.87E+00	1.40E+01	1.40E+01
barium	2.52E+03	2.81E+02	2.52E+03
beryllium	1.56E+01	7.40E-01	1.56E+01
cadmium	1.64E+01	8.80E-01	1.64E+01
calcium	NT	3.80E+04	3.80E+04
chromium iii	3.22E+04	4.10E+01	3.22E+04
chromium vi	9.73E+01	NA	9.73E+01
cobalt	NT	2.00E+01	2.00E+01
copper	1.26E+03	5.30E+01	1.26E+03
cyanide	6.99E+02	NA	6.99E+02
iron	NT	6.05E+04	6.05E+04
lead	NT	1.11E+02	1.11E+02
mercury	6.78E+00	2.80E-01	6.78E+00
molybdenum	1.24E+03	2.30E+01	1.24E+03
nickel	2.39E+02	2.90E+01	2.39E+02
potassium	NT	8.26E+03	8.26E+03
selenium	1.82E+02	1.24E+03	1.24E+03
silver	1.30E+02	2.39E+02	2.39E+02
sodium	NT	1.96E+03	1.96E+03
thallium	NT	1.10E+01	1.10E+01
titanium	NT	1.95E+03	1.95E+03
vanadium	8.37E+01	8.20E+01	8.37E+01
zinc	8.73E+03	1.98E+02	8.73E+03

**NOTES:**

\*ILM background values provided in Baseline Risk Assessment (G&M 1996).

NT = No Toxicity values available for calculation of HBRG

NA = Not Available.

**TABLE 14**  
**Remedial Excavations WL-RE-1, B44-RE-1, B37-RE-6, and B37-RE-7**  
**Stockpile Soil Disposition Reference**

		Screening Criteria Summary*		Soil Location				
		Non-Haz Waste	Non-RCRA Haz Waste	Backfill Area Boundries**				
Stockpile	Sample ID			North	East	South	West	Depth (bgs)
WL-RE1-A	WL-GS-1-2' WL-RE1-SP1	X		Disposed Off-Site as Non-Hazardous Waste				
WL-RE1-B	not sampled			Disposed Off-Site as Non-Hazardous Waste				
B44-RE1-A	B44-GS-5-2' B44-RE1-SP1			17	A.9	21	A.6/A.7	2' - 1'
B44-RE1-B	B44-RE1-SP2 B44-RE1-SP2A			17	A.9	21	A.6/A.7	4' - 1'
				10	A.6	11	A.1	7' - 2'
B44-RE1-C	B44-RE1-SP3			17	A.9	21	A.6/A.7	1'
				4	A.12	17	A.8	2'
Additional material to be backfilled								
B37-RE6-A	B37-RE6-SP1 Kennedy-Jenks 3J-2 @ 10'			10	A.6	11	A.1	8' - 5'
B37-RE7-A	B37-GS-206-5' B37-GS-207-5'			10	A.6	11	A.1	7' - 2'
				17	A.9	20	A.7	4' - 1'

\* Blank space denotes soil samples which pass all screening criteria.

X Denotes stockpile disposition based on soil sample failing a screening criterion.

bgs = below ground surface

\*\* Refer to Figure 19 for backfill locations